

VIRGINIA HIV/AIDS EPIDEMIOLOGIC PROFILE



Data Through 2000

**Prepared by
Virginia Department of Health
Division of HIV/STD**

Virginia HIV/AIDS Epidemiologic Profile

Development of this document was performed by the Virginia Department of Health Division of HIV/STD to provide guidance for statewide HIV/AIDS prevention, education and treatment activities and to assist the Virginia HIV Community Planning Committee. This document was adapted from the 2000 Epidemiology of HIV/AIDS in Virginia: Challenges for Prevention and Care report, developed by Judith Bradford, Ph.D. and the staff of the Survey Evaluation Research Laboratory at Virginia Commonwealth University.

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□ Section 1.

Purpose and Format of the Report

Purpose

The Virginia HIV Community Planning Committee (VHCPC) develops its Comprehensive HIV Prevention Plan on a three year planning cycle. Year one of this process includes analysis of epidemiological data in order to understand and track changes in the HIV/AIDS epidemic and to ensure that resources are appropriately directed to the populations and communities in need.

This Epidemiologic Profile is intended to guide the work of the VHCPC as it prioritizes populations and interventions. We also hope that it assists prevention and care providers in planning and allocating their resources.

This report presents an analysis of HIV/AIDS surveillance data reported through the end of December 2000 and is supplemented with data from several other existing databases. The report has been prepared by the Virginia Department of Health, Division of HIV/STD. Preparation of the report has been accomplished in conjunction with the Ryan White Subcommittee of the VHCPC and will also be useful to Virginia's Ryan White Program. This cooperative approach to report development is one example of ongoing efforts to coordinate Ryan White Care Act (RWCA) programs and HIV Community Planning in Virginia.

The epidemiology of HIV/AIDS has changed over the last five years, as the actual numbers of HIV cases and AIDS cases reported have been steadily decreasing. With AIDS, much of the decrease is due to the successful treatment regimens that have been introduced over the past five years. The number of HIV case reports has also decreased, hopefully due to ongoing prevention efforts in Virginia. The population of persons currently becoming infected with HIV is different from that of the early epidemic. For example, although the actual number of persons infected with HIV through heterosexual contact may not show an increase, the proportion of total reports

with that risk do. This means that heterosexual activity is responsible for more infections, proportionally, than early in the epidemic.

Due to the length of time between infection with the virus and onset of AIDS, characterizing reports of AIDS gives the reader an historical perspective of where the epidemic was almost a decade ago. The Commonwealth of Virginia is fortunate to have had reporting of HIV infections since 1989, since this allows for a more current examination of who is becoming infected and which behaviors are associated with the more recent infections. Description of these cases and their associated risks helps to guide prevention efforts, both primary and secondary.

Format

This report focuses on persons reported with HIV infection and those currently living with either HIV infection or AIDS in order to determine the priority populations to target for prevention efforts in the future. Data are presented to provide an overview of what the epidemiological impact has been on Virginia, to describe the geographic distribution of the epidemic and to look at who is at risk for future infection. Each chapter is prefaced by key points that should help planners in making decisions regarding targeted efforts to prevent new infections and continue the decreasing trend in reports seen throughout the last five years. This report concentrates on case reports received between 1996-2000, the last five years. During that time, the case definition for an AIDS diagnosis was unchanged.

The report is organized to focus on the number and characteristics of persons reported with HIV and with AIDS in the Virginia general population and the prevalence and characteristics of persons living with HIV/AIDS. Special attention is directed toward priority sub-populations and to the extent permitted by available data, also on co-morbidity factors. A final chapter addresses core issues that cut across prevention and care, exploring linkages between these two inter-related systems of Virginia's response to the epidemic.

Data Sources

Existing Data Systems. The primary source of data for this report is data from the national HIV/AIDS Reporting System (HARS). This data set is collected through monthly case reports to the Virginia Department of Health Division of HIV/STD, which enters and verifies lab report submissions. A core set of data, excluding personal identifiers, is then forwarded to the Centers for Disease Control and Prevention (CDC) in Atlanta, Georgia. The data in this document include all case reports received and entered into HARS through December 31, 2000. HARS data files are continually updated as new information is received so numbers reported here will differ from those presented at a later time.

Data regarding sexually transmitted diseases were also provided by the Division of HIV/STD and reflect all reported cases through December 31, 2000. Teen pregnancy data were obtained from the Virginia Department of Health's Center for Health Statistics and reflect data recorded for all teen pregnancies through 1999, the latest year for which data were available. These data were reported in the Virginia Health Statistics Annual Report for 1999.

Ryan White Care Act (RWCA) Title II client data were obtained from annual Virginia Uniform Reporting System service reports prepared by the Survey Evaluation Research Laboratory (SERL) under contract with the Division of HIV/STD to collect and manage client and service data and as part of the federal Health Resources and Services Administration (HRSA) Demonstration Grant for Client-level Uniform Data Reporting. Additional data were obtained from the U.S. Census Bureau estimates, Census Bureau website.

Client and Other Surveys. SERL conducts surveys and program evaluation studies for the VHCP, and a number of these efforts have produced information used to supplement epidemiological data for prioritization and planning. Reference to several of these studies is made throughout the report, and a list of them is provided in the References section.

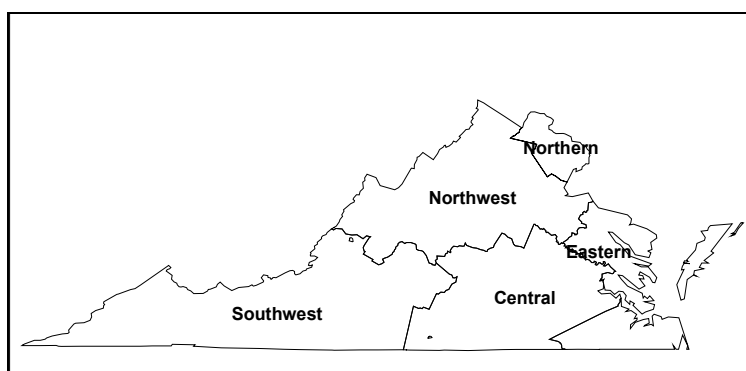
□ Section 2.

Virginia Population Characteristics and Prevalence of HIV/AIDS

Demographics of the Population

The U.S. Census Bureau estimates the 2000 Virginia population at 7,078,515 residents. The number of Virginians increased by 14% (891,157 individuals) from 1990 to 2000 and now makes up 2.5% of the total population of the United States. Although Virginia is a mostly rural state, only 22% of Virginia's residents live in rural areas – 78% live in Virginia's eight Metropolitan Statistical Areas (MSA).¹ For health planning and various service delivery purposes, the state is divided into five Health Service Areas (regions) as shown in the map below. The proportion of Virginians who live in each of these five regions ranges from 14% in the Northwest to 26% in the Northern Region (Table 1). Each of Virginia's five Ryan White Title II consortia has responsibility for one of these regions. Two of these regions overlap with or include RWCA Title I Eligible Metropolitan Areas (EMA) – the Northern Region, a portion of which lies within the District of Columbia EMA, and the Eastern Region, which contains the Norfolk EMA within its boundaries.

Figure 1. Virginia Health Service Areas



¹ The eight MSAs include: northern Virginia counties and cities surrounding the District of Columbia; the Richmond-Petersburg corridor in central Virginia; the Tidewater Region in eastern Virginia; Charlottesville and surrounding counties in the northwest; and the independent cities of Bristol, Roanoke, Danville, and Lynchburg with their surrounding counties in the southwest section of Virginia.

Income

During 1997 (the most recent year for which data are available through the US Census Bureau), the household median income of Virginians was estimated at \$40,209. It was also estimated that 11.6% of Virginians live in poverty, with Lee County showing the highest percent of persons living in poverty (28%) and Falls Church City having the lowest poverty rate (3.5%). Similarly, in 1999, the national median income was \$40,816, with a poverty rate of 11.8%.

Health

In 1999, Virginia had 95,207 live births with a rate of 13.9 per 1,000. Also in 1999, 55,182 persons died with a death rate of 8.1 per 1,000. According to the Virginia Center for Health Statistics, the five leading causes of death (for persons of all ages) in 1999 were: 1) heart disease, 2) malignant neoplasms, 3) cerebrovascular diseases, 4) chronic lower respiratory disease, 5) unintentional injury. Of communicable diseases in 1999, HIV/AIDS was by far the leading cause of death in Virginia. In addition, HIV/AIDS was the fifth leading cause of death for Virginians ages 35-44. For all ages, HIV/AIDS is the 20th leading cause of death in Virginia for diseases with International Classification of Disease (ICD) codes. In 1997, 13% of Virginians were without private or government health insurance.

Education

According to the Virginia Department of Education, a total of 1,386,333 children (ages 5-19) were enrolled in school in 1999. Also in 1999, 8,897 children were enrolled in special education programs. The number of students who dropped out during the 1999-2000 school year was 12,684 with a dropout rate of 2.6%. The US Census Bureau reports that in 2000, 26.8% of adult Virginians had at least a high school education, while about 20% had less than a high school education. Thirty percent of Virginians have a bachelor's degree or higher.

Gender and Race

In 2000, about half of Virginians were female (51%) and half male (49%). In regard to race, 70% were non-Hispanic white, compared with 19% non-Hispanic black, 5% Hispanic, 4% Asian/Pacific Islander, and less than 1% American Indian/Alaskan Native (Table 1).² Persons of Hispanic ethnicity increased in number the most substantially – a 106% increase in ten years. In that same time period, Asian/Pacific Islanders increased 47%, American Indian/Alaskan natives 30% and blacks 19%. Whites are the slowest growing group with an increase in population of less than 6% over the ten year time period.

Table 1. Race/Ethnicity of Virginians in 2000 by Region (U.S. Census Bureau estimates)

	Estimated Population	% of State Total	% White, Non-Hispanic	% Black, non-Hispanic	% Hispanic	% Asian Pacific-Islander	% Other
Statewide	7,078,515		70.2	19.4	4.7	3.7	2.0
Northern	1,815,197	25.6	64.9	10.9	11.5	9.6	3.1
Eastern	1,717,627	24.3	61.0	31.1	3.1	2.6	2.3
Central	1,218,327	17.2	62.4	32.2	2.1	1.8	1.5
Northwest	1,019,548	14.4	84.6	10.1	2.6	1.2	1.6
Southwest	1,307,816	18.5	85.5	11.5	1.2	0.8	1.1

Two of Virginia's five health regions (Northern and Eastern) together contain half of the entire state's population, with approximately one-quarter each. These regions have little else in common with each other, however. Although Northern Virginia is the smallest of the five regions in terms of geographic space, it is home to over 1.8 million people. This region includes the cities of Alexandria, Fairfax, Falls Church, Manassas Park and Manassas, and the counties of

² In this report, non-Hispanic whites will be referred to as whites, non-Hispanic blacks will be termed blacks, and Hispanics will include all persons of Hispanic origin, regardless of race. Because of the small number of American Indian/Alaskan natives in Virginia, they are combined in an 'other race' category.

Arlington, Fairfax, Loudon, and Prince William. This area is largely urban, has one of the highest costs of living in the nation, and reports the largest proportion of Hispanic and Asian minority populations. The Northern Region is 65% white, 11% black, 12% Hispanic, and 10% Asian/Pacific Islander.

Eastern Virginia includes vast rural and coastal areas such as the Eastern Shore, as well as a significant metropolitan area around Norfolk/Hampton Roads, recently designated as a RWCA Title I EMA. The Eastern Region is Virginia's second most populated region and has a disproportionately higher proportion of blacks when compared to the state as a whole and to all other regions except Central.

The Northwest and Southwest Regions of Virginia are largely rural and mountainous, and compared to the rest of Virginia are disproportionately white. In 2000, 85% of Northwest Virginians were white, 10% were black, and approximately 6% were Hispanic or of another race. Eighty-six percent of Southwestern Virginians were white, 12% were black, and 3% were Hispanic and other races combined. Northwest had the smallest population overall, while the number of persons living in Southwest was comparable to the number in Central Virginia. Southwest is the largest geographic area, covering 29 counties and 12 cities within its 13,925 square miles. Northwest covers over 10,000 square miles within its 24 counties.

Central Virginia contains a mix of urban and rural areas and covers 22 counties and 6 cities, including Richmond, the State Capital. Over 1 million people live in the Central Region, representing 17% of the State's population. Like Eastern, Central's population is disproportionately African-American, when compared with the remaining three regions, where percentages range from 10.1– 11.5%.

Age

Just over a quarter of Virginia's population (27%) are children and youth (age 0-19), and the same proportion (27%) are age 50 and older (Table 2). Age ranges are quite similar across the state, and within genders, except that after the age of 50, the proportion of females increases with respect to males.

Table 2. Age of Virginia's Population in 2000

Age-Group	Number	% of State Population
0-12 Years	1,254,639	17.7
13-19 Years	682,447	9.6
20-29 Years	999,057	14.1
30-39 Years	1,118,828	15.8
40-49 Years	1,099,973	15.5
50+ Years	1,923,572	27.2
TOTAL	7,078,515	100.0

Prevalence of HIV/AIDS

Prevalence refers to the number and proportion of people with a specific health condition within a specified population at a particular point in time and is usually expressed as a “prevalence rate,” meaning the number of persons out of every 100,000 who have it (in this case HIV/AIDS). In this report, we discuss the prevalence of persons living with HIV/AIDS (PLWHA) within the population of Virginians, and break it down for gender, race/ethnicity, and age. Overall numbers are shown in Table 3, where it can be seen that over 13,000 PLWHA are reported to be living among the general population.

The percentage of PLWHA among the general population in Eastern and Central Virginia are considerably higher than in other Regions – both 0.27% compared with 0.19% in Northern

Virginia, .08% in both Northwest and Southwest. Over a third of Virginia's reported PLWHA (35%) are thought to be living in the Eastern Region, clearly the most heavily impacted.³

Table 3. Regional Impact of HIV/AIDS

	% of Virginia Population	Living with HIV/AIDS		
		Number	% of Region who are PLWHA	% of State PLWHA in Region
Statewide		13,462	0.19	
Northern	24.7	3,514	0.19	26.1
Eastern	25.0	4,678	0.27	34.8
Central	17.1	3,324	0.27	24.7
Northwest	14.3	853	0.08	6.3
Southwest	18.9	1093	0.08	8.1

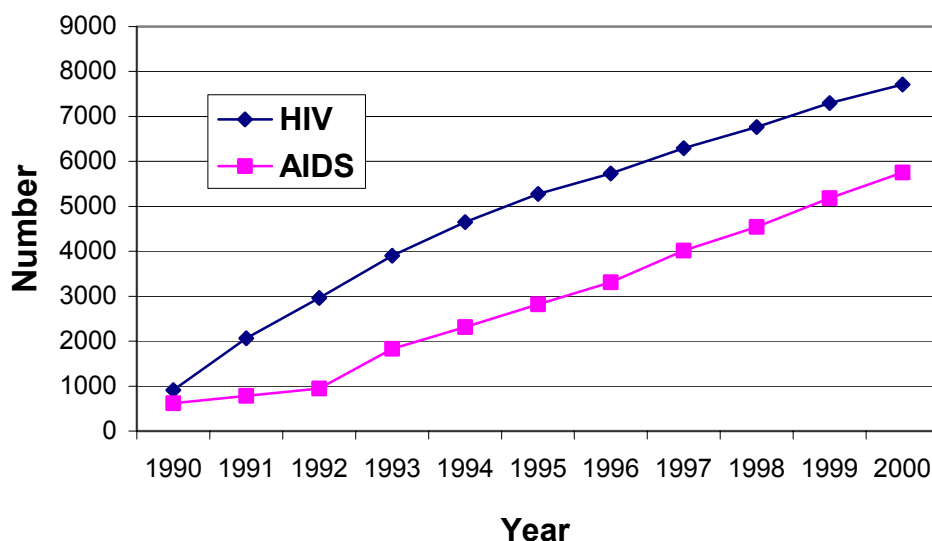
- Total population numbers are based on the 2000 U.S. Census.
- Numbers living with HIV/AIDS as of December 31, 2000 based on HARS data from Virginia

Trends

The steady upward trend in the number of persons living with HIV/AIDS is clearly seen in Figure 2, where estimated numbers of PLWHA are shown for each year from 1990 through 2000. More detailed information about the characteristics and prevalence of Virginia PLWHA are shown in Table 4 and discussed in this section.

³ Addresses used to count reports are recorded at time of testing, so regional counts and estimates may be distorted due to changes in residence.

Figure 2. Persons Living with HIV/AIDS 1990-2000



Characteristics and prevalence of Virginia PLWHA vary by gender, race/ethnicity, age, and geographic area, as shown in Table 4. As noted earlier in the report, the prevalence of PLWHA within the general population is greatest in the Central and Eastern Regions, with prevalence rates of 157.4 and 166.6 for HIV and 115.5 and 105.7 for AIDS, respectively. Prevalence rates are much lower in the other regions, from 46.3 in Southwest and 43.0 in Northwest, to 104.1 in Northern Virginia (for HIV); from 37.3 in Southwest and 40.7 in Northwest to 89.5 in Northern Virginia (for AIDS). The overall state prevalence rates are 109.0 for HIV (108 of every 100,000 persons are estimated to have HIV) and 81.2 for AIDS (81 of every 100,000 Virginians are estimated to have AIDS).

Virginians living with HIV/AIDS are disproportionately male – 71% of those with HIV and 80% of those with AIDS. Gender distribution is consistent across the regions, except that in Northern Virginia, the percentage of women who have AIDS is lower than in other regions. In Eastern Virginia, the percentage of women who have AIDS is higher than other regions. In

Southwest Virginia, the percentage of women who have HIV (not AIDS) is higher than in other parts of the state.

In three regions (Northwest, Northern and Southwest), persons with AIDS are approximately half white and half persons of color, but in Central and Eastern, less than a third are white. The pattern is different with HIV, however, reflecting the changing demographics of the epidemic. In Northern Virginia, with a fairly even split between whites and persons of color with AIDS, only a little over a third of those with HIV are white – 58% are African-American and 6% Hispanic. Similar differences are seen in the other regions and reflect two significant underlying trends that planners must take into consideration: first, the demographics of Virginia's population are becoming more diverse, with increasing numbers of people of color; and second, new reports of HIV/AIDS are increasingly more often among persons of color in Virginia as in all areas of the country.

These trends have resulted in substantial race/ethnicity and gender-based differences, as shown in Table 5, on pg. 16. While the statewide HIV prevalence rate in 2000 was 108.9, the rate for blacks (370.2) was 8 times that of whites and five times that of Hispanics. For AIDS, the statewide prevalence rate was 81.2, with the rate for blacks (241.3) nearly six times that of whites and three times that of Hispanics. Among whites, males are ten times as likely to have AIDS than females (prevalence rates of 38.9 and 4.1, respectively). Among blacks, the breakouts are very different: black males are only 3 times as likely as black females to have AIDS. Hispanic males are four times as likely as Hispanic females to have AIDS.

HIV prevalence rates also show race/ethnicity and gender-based differences, although with different patterns than are seen in AIDS. White males are four times as likely as white females and Hispanic males are three times more likely than their female counterparts to have HIV. The prevalence rate for Black males is just over twice the rate for black females (245.5 and 124.7, respectively). Differences in race/ethnicity and gender-based rates for AIDS and HIV are shown graphically in Figure 3.

Table 4. Profile of Persons Living With HIV/AIDS (as of December 31, 2000)**Persons Living With HIV infection only as of December 31, 2000**

	Northern		Eastern		Central		Northwest		Southwest		Total	
	#	%	#	%	#	%	#	%	#	%	#	%
Gender												
Male	1,327	70.2	2,043	71.4	1,383	72.1	315	71.9	417	68.9	5,485	71.1
Female	563	29.8	819	28.6	534	27.9	123	28.1	188	31.1	2,227	28.9
Race/Ethnicity												
White	622	32.9	709	24.8	423	22.1	221	50.5	270	44.6	2,245	29.1
Black	1,100	58.2	2,025	70.8	1,448	75.5	202	46.1	321	53.1	5,096	66.1
Hispanic	119	6.3	80	2.8	32	1.7	12	2.7	9	1.5	252	3.3
Asian/Pacific Islander	30	1.6	16	0.6	3	0.2	2	0.5	0	0.0	51	0.7
Alaskan/Native American	0	0.0	4	0.1	2	0.1	0	0.0	0	0.0	6	0.1
Other/unknown	19	1.0	28	1.0	9	0.5	1	0.2	5	0.8	62	0.8
Age												
0-12	12	0.6	20	0.7	18	0.9	9	2.1	12	2.0	71	0.9
13-19	58	3.1	139	4.9	59	3.1	21	4.8	26	4.3	303	3.9
20-29	582	30.8	1,152	40.3	633	33.0	138	31.5	216	35.7	2,721	35.3
30-39	805	42.6	1,022	35.7	778	40.6	175	40.0	226	37.4	3,006	39.0
40-49	353	18.7	415	14.5	340	17.7	66	15.1	95	15.7	1,269	16.5
50+	80	4.2	114	4.0	89	4.6	29	6.6	30	5.0	342	4.4
Total	1,890		2,862		1,917		438		605		7,712	
Rate	104.1		166.6		157.4		43.0		46.3		109.0	

Persons Living With AIDS as of December 31, 2000

	Northern		Eastern		Central		Northwest		Southwest		Total	
	#	%	#	%	#	%	#	%	#	%	#	%
Gender												
Male	1,363	83.9	1,413	77.8	1,117	79.4	333	80.2	384	78.7	4,610	80.2
Female	261	16.1	403	22.2	290	20.6	82	19.8	104	21.3	1,140	19.8
Race/Ethnicity												
White	790	48.6	557	30.7	336	23.9	206	49.6	249	51.0	2,138	37.2
Black	662	40.8	1,197	65.9	1,043	74.1	192	46.3	227	46.5	3,321	57.8
Hispanic	142	8.7	52	2.9	24	1.7	15	3.6	10	2.0	243	4.2
Asian/Pacific Islander	28	1.7	6	0.3	3	0.2	2	0.5	2	0.4	41	0.7
Alaskan/Native American	0	0.0	3	0.2	1	0.1	0	0.0	0	0.0	4	0.1
Other/unknown	2	0.1	1	0.1	0	0.0	0	0.0	0	0.0	3	0.1
Age												
0-12	12	0.7	43	2.4	19	1.4	5	1.2	12	2.5	91	1.6
13-19	7	0.4	9	0.5	12	0.9	1	0.2	1	0.2	30	0.5
20-29	276	17.0	365	20.1	211	15.0	82	19.8	92	18.9	1,026	17.8
30-39	766	47.2	815	44.9	656	46.6	174	41.9	237	48.6	2,648	46.1
40-49	426	26.2	458	25.2	386	27.4	120	28.9	114	23.4	1,504	26.2
50+	137	8.4	126	6.9	123	8.7	33	8.0	32	6.6	451	7.8
Total	1,624		1,816		1,407		415		488		5,750	
Rate	89.5		105.7		115.5		40.7		37.3		81.2	

Table 5. Persons Living with HIV/AIDS as of December 31, 2000 by Race/Ethnicity and Gender

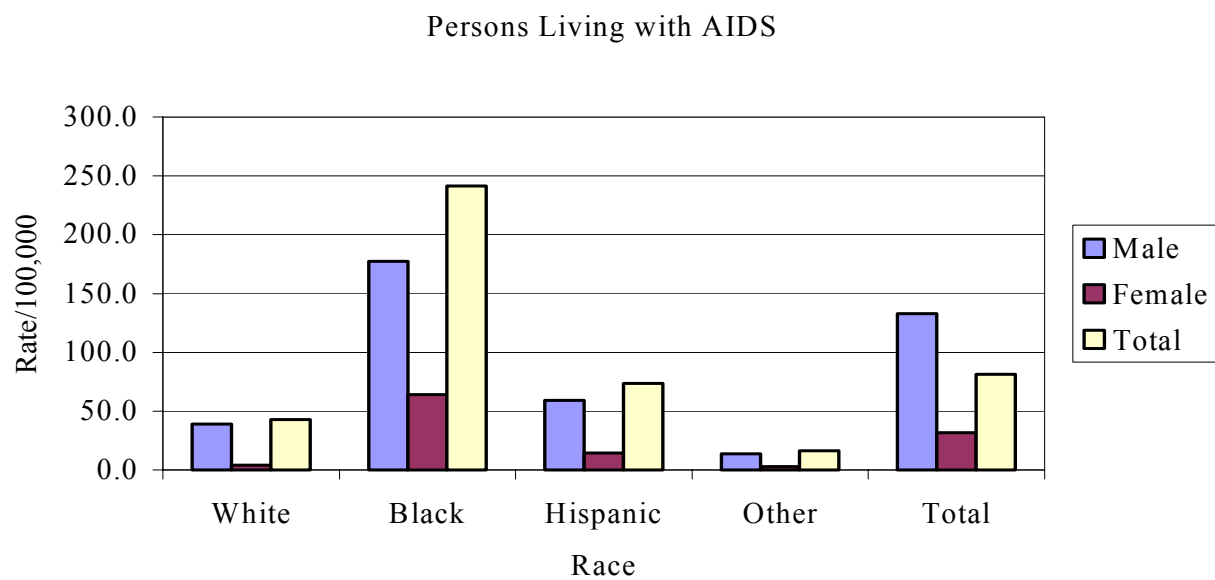
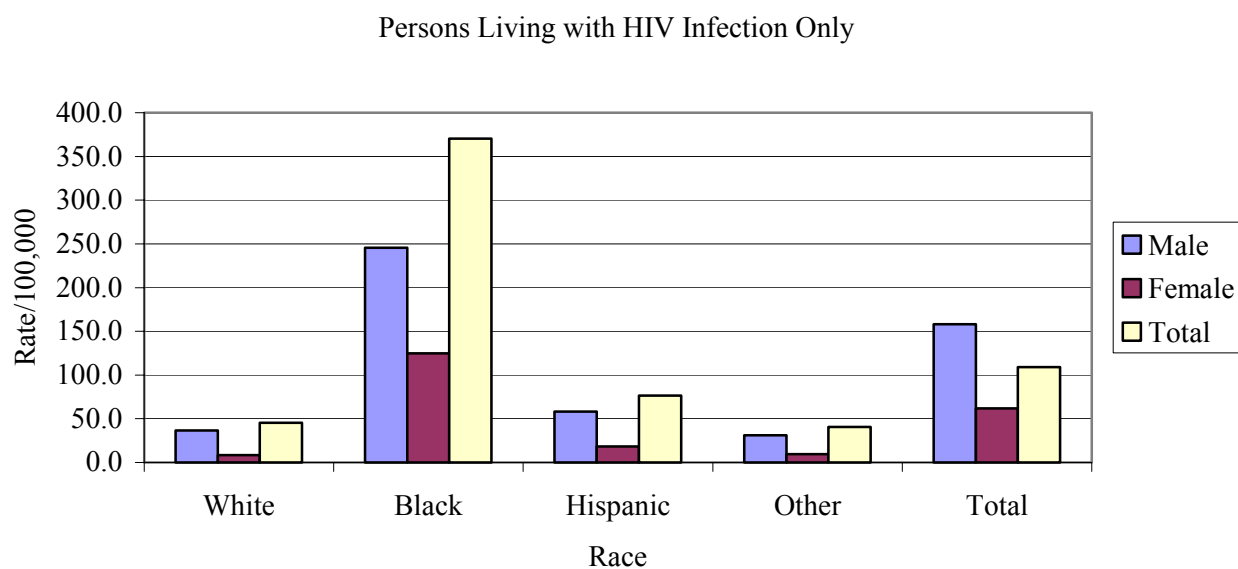
Persons Living With HIV infection Only

	Male (%)	<i>Prevalence Rate/100,000</i>	Female (%)	<i>Prevalence Rate/100,000</i>	Total (%)	<i>Prevalence Rate/100,000</i>
White	1,823 (33)	36.7	422 (19)	8.5	2,245 (29)	45.2
Black	3,379 (62)	245.5	1,717 (77)	124.7	5,096 (66)	370.2
Hispanic	192 (4)	58.3	60 (3)	18.2	252 (3)	76.5
Other	91 (2)	31.1	28 (1)	9.6	119 (2)	40.6
Total	5,485	158.0	2,227	61.7	7,712	108.9

Persons Living With AIDS

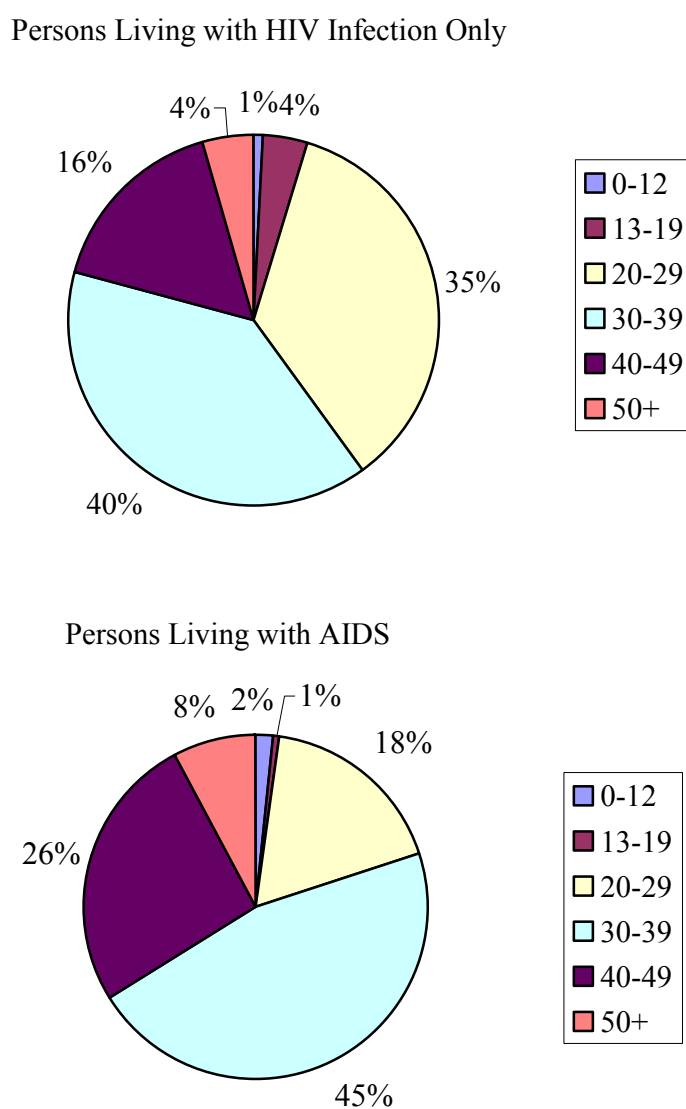
	Male (%)	<i>Prevalence Rate/100,000</i>	Female (%)	<i>Prevalence Rate/100,000</i>	Total (%)	<i>Prevalence Rate/100,000</i>
White	1,934 (42)	38.9	204 (18)	4.1	2,138 (37)	43.1
Black	2,441 (53)	177.3	880 (77)	63.9	3,321 (58)	241.3
Hispanic	195 (4)	59.2	48 (4)	14.6	243 (4)	73.7
Other	40 (1)	13.7	8 (1)	2.7	48 (1)	16.4
Total	4,610	132.8	1,140	31.6	5,750	81.2

Figure 3. Prevalence Rates for HIV and AIDS (2000)



Most Virginians with HIV/AIDS are between the ages of 20 and 49, as shown in Table 4 and Figure 4 below. Age distributions are somewhat different for AIDS and HIV. Persons living with HIV are younger – 80% of those living with AIDS were over 30 years of age, compared with 60% of those living with HIV. Eighteen percent of those with AIDS were in their 20s, compared with 35% of those living with HIV infection (not AIDS).

Figure 4. Age Distribution among Virginians Living with HIV/AIDS (2000)



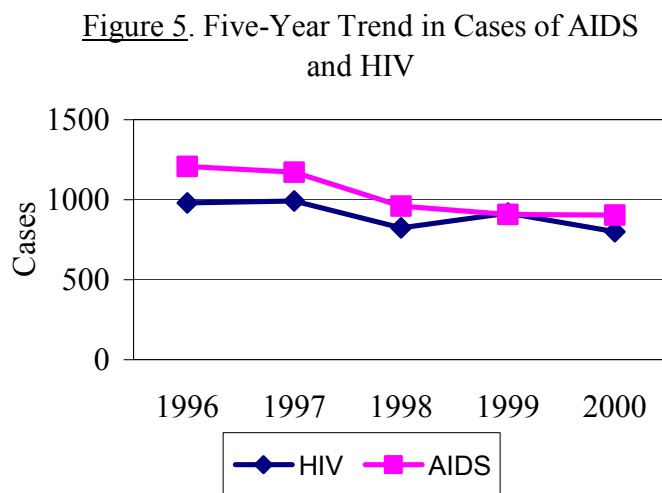
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Impact of HIV/AIDS in Virginia – Incidence Reports

Trends in HIV/AIDS Case Reports

Every state as well as the District of Columbia requires name-based reporting of AIDS cases. In Virginia, reporting of AIDS cases became mandatory in 1983, although some medical providers voluntarily began reporting in 1982. There have been 12,909 reported AIDS cases in Virginia through December 31, 2000.

Unlike AIDS, HIV reporting is not required in every state. Thirty-seven states have named-based reports, six report all HIV cases but use an unique identifier instead of names, two report pediatric HIV only and the remaining five states and the District of Columbia do not track HIV cases. Virginia implemented name-based HIV reporting in July 1989. This has given Virginia an excellent opportunity for evaluating emerging trends in this disease. Since HIV reporting began, there have been 12,727 cases reported in the state.



When examining trends, two important statistical tools used are incidence and incidence rate. Incidence refers to the number of new cases of a health condition

Table 6. HIV/AIDS Case Reports (1982 – 2000)

Year	HIV Reports	AIDS Report
1982	NR	6
1983	NR	21
1984	NR	42
1985	NR	102
1986	NR	167
1987	NR	268
1988	NR	375
1989	198	443
1990	1,143	647
1991	1,645	661
1992	1,370	743
1993	1,496	1,629
1994	1,108	1,192
1995	1,253	1,458
1996	980	1,209
1997	993	1,171
1998	825	961
1999	917	909
2000	799	905

reported within a specific population within a stated period of time. Incidence rate refers to the number of new cases per 100,000 population. Population numbers used for the statistics and charts in this report will use census numbers for 1990 and 2000. Population numbers for 1991 through 1999 will use projections based on the 1990 census numbers.

After initially increasing, there are now downward trends in both AIDS and HIV reporting, as shown in Figure 5 and Table 6. AIDS incidence increased each year from 1982 to a high of 1,629 in 1993. The steep increase in reports during 1993 (see Table 6) was due to the expansion of the AIDS case definition to include HIV-infected persons diagnosed with pulmonary tuberculosis, invasive cervical cancer or recurrent pneumonia, or with a CD4 T-cell count less than 200/mm³ or less than 14%. AIDS incidence began decreasing in 1995. Cases decreased 18% from 1996 to 2000 (from 980 to 799).

Unlike AIDS, the decline in HIV between 1996 and 2000 has not been as steady and for two of the five years HIV incidence increased over the prior year. Still, the 799 cases of HIV reported in 2000 represent the lowest number of reported cases for a full year of reporting since reporting began.

Adult/Adolescent Reporting

The Center for Disease Control and Prevention (CDC) defines adult/adolescent cases to be individuals diagnosed with HIV/AIDS at age 13 or later. In 2000, 795 new cases of adult/adolescent HIV infection and 898 cases of adult/adolescent AIDS were reported in Virginia, resulting in incidence rates of 13.7 and 15.4, respectively (Table 7). This means that for every 100,000 adult/adolescent Virginians, there were 14 new cases of HIV and 15 new cases of AIDS that year. The incidence rate of reported adult/adolescent AIDS cases in Virginia was lower than the United States overall rate (18.0 per 100,000 compared with 15.4). Comparisons cannot be made for HIV, since not all states have mandatory HIV reporting. (Unless otherwise stated, the rest of the report will use adult/adolescent cases for its statistics and charts.)

Table 7. Adult/Adolescent Case Reports, (Virginia Compared with U.S. - 2000)

	Virginia		United States	
	Number Reports	Rate/100,000	Number Reports*	Rate/100,000*
HIV**				
Total	795	13.7	21,480	NA
Adult/Adolescent Males	547	18.8	14,707	NA
Adult/Adolescent Females	248	8.5	6,769	NA
AIDS				
Total	898	15.4	41,960	18.0
Adult/Adolescent Males	678	23.3	31,501	27.0
Adult/Adolescent Females	220	7.5	10,459	9.0

*CDC 2000 HIV/AIDS Surveillance Report. **HIV is not reportable in all states and territories.

Regional Differences

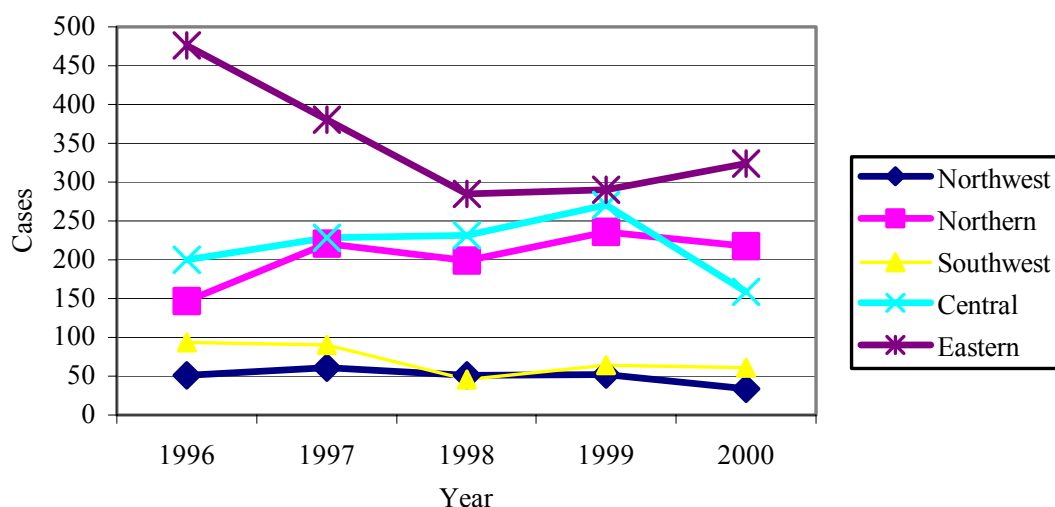
The incidence of HIV and AIDS case reports varies greatly across Virginia's five health regions, as shown in Table 8 and graphically in Figure 6. Cases from the rural regions, Northwest and Southwest, occur much less often than cases from the rest of the Commonwealth. For example, in 2000, 34 new cases of HIV were reported in the Northwest, and 324 new cases were reported in the Eastern Region. Nearly ten times as many new cases of HIV and six times as many new cases of AIDS were reported in Eastern, compared with Northwest. Though differences in population account for some of the disparities, incidence rates (which account for differences in population) still show disparities between the rural and urban regions. The combined populations of the Northwest and Southwest regions account for 33% of Virginia's adult/adolescent population. The combined cases for the regions account for only 12% of the HIV cases and 14% of the AIDS cases. However, even with the lower rates in rural areas, it is important to realize that a single case in a rural area can have a greater impact on public awareness of the disease and fiscal resources needed to find cases and care for patients.

Table 8. Adult/Adolescent HIV/AIDS Incidence and Rates by Region (2000)

	HIV		AIDS	
	Number Reports	Rate/ 100,000	Number Reports	Rate/ 100,000
Central	159	15.8	200	19.9
Eastern	324	23.3	297	21.3
Northern	217	14.7	273	18.5
Northwest	34	4.0	46	5.5
Southwest	61	5.5	82	7.4
Virginia	795	13.7	898	15.4

HIV morbidity trends also vary among the regions (see Figure 6). The only region to show a net increase from 1996 to 2000 was Northern, which increased 48% (from 147 cases to 217). The other four regions all showed decreases ranging from 20% to 35% over the same five-year time period. However, the pattern of decrease varied from region to region. Although Eastern experienced an overall decrease of 32% (from 476 cases to 324), the sharpest decline was between 1996 and 1998, and the region has shown slight increases each year since. Central decreased 20% (from 200 to 159) over the same time period, but peaked in 1999 with 271 cases before sharply decreasing in 2000 to 159 cases. Northwest decreased 33% over the five-year time period (51 to 34) with the largest decrease occurring in 2000. Southwest decreased 35% (51 to 34) with the largest decrease occurring in 2000.

Figure 6. Five-Year Trend in Regional HIV Incidence



(from 94 to 61), the largest percentage decrease of the five regions. Southwest's lowest incidence of HIV occurred in 1998 with 46 reported cases.

The Virginia Department of Health, Division of HIV/STD has four HIV epidemiology consultants assigned to the regions (the Northern and Northwest regions are combined and assigned to one consultant) who communicate with local providers to ensure complete and accurate reporting. The division also has a fifth consultant who specializes in pediatric reporting. Regional morbidity trends can be highly affected by staffing and worker activities such as validation studies and other special projects that occur in the individual region.

Similar comparisons and contrasts can be made with AIDS incidence across the five regions, indicating how prevention activities and healthcare providers responding to HIV/AIDS must take regional characteristics into consideration in all phases of service planning and delivery. Regional differences such as these also have an impact on public perceptions of the epidemic and thus can have a substantial influence on community response and public policy.

Gender-Based Differences

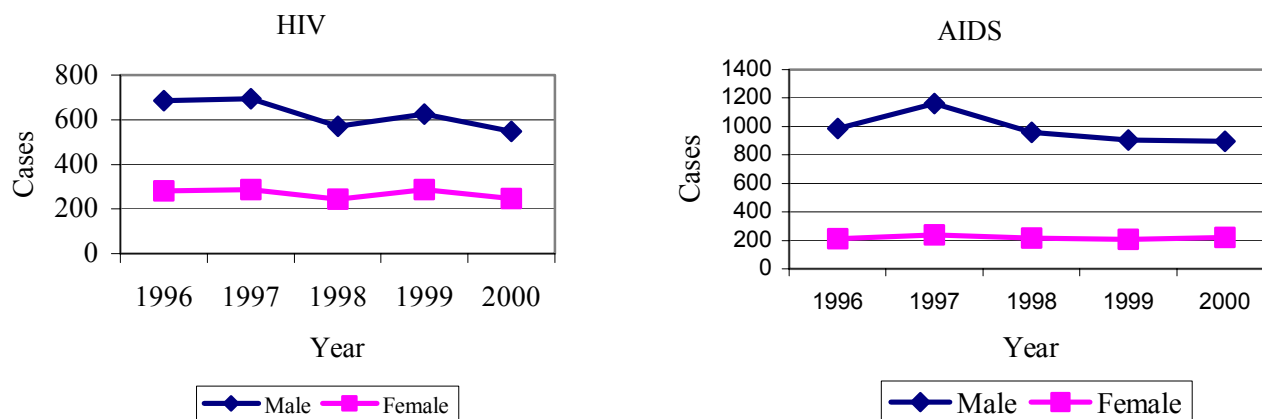
For both HIV and AIDS, males have far exceeded females for every year the disease has been reported. In 2000 – 2.2 times as many males as females were reported with HIV and 3.1 times as many males as females were reported with AIDS. Gender-based differences have been apparent since reporting was initiated, but have shown changes over time. Over the five-year reporting period (1996-2000), women made up increasingly larger percentages of new HIV and AIDS cases (Table 9). Females were 29% of HIV cases reported in 1996, and in 2000 they were 31% of new cases. The proportion of females within new AIDS cases increased to an even greater extent, from 18% in 1996 to 25% in 2000. To further illustrate these changes, male HIV cases decreased 20% from 1996 to 2000 while female HIV cases decreased only 12% over the same time period. Male AIDS cases decreased 31% while female AIDS cases actually increased 4% over the same five year period. The downward trend in new cases is also noticeably more pronounced for men than for women (see Figure 7).

Table 9. Number and Proportion of Reports by Gender (1996-2000)

Year		Males		Females	
		Number	%	Number	%
HIV					
1996	968	686	70.9	282	29.1
1997	980	694	70.8	286	29.2
1998	813	570	70.1	243	29.9
1999	913	626	68.6	287	31.4
2000	795	547	68.8	248	31.2
AIDS					
1996	1,199	987	82.3	212	17.7
1997	1,161	922	79.4	239	20.6
1998	957	741	77.4	216	22.6
1999	906	699	77.2	207	22.8
2000	898	678	75.5	220	24.5

Gender-based proportions also vary to some extent by region, as shown in Table 10. In Northern Virginia, the proportion of HIV female cases is higher than in the other regions with 34% in 2000 cases being female. The Northwest region, on the other hand, has the lowest proportion of female HIV cases for 2000 at 26%. In the other three regions, females make up between 30 and 31 percent of the 2000 cases. Female proportions of AIDS cases in 2000 are in sharp contrast to those of HIV. Although the Northern Region had the highest proportion of female HIV cases,

Figure 7. HIV/AIDS Cases by Gender



they had the proportion of female HIV cases but highest proportion of female AIDS cases at 39%. These differences also emphasize how essential it is that planning take gender differences into account at each stage of the disease when considering the best package of services to fund for the different regions.

Risk of transmission categories also differs greatly between genders. A much higher proportion of female cases have no identified risk. For the year 2000, 40% of female HIV cases have no identified risk compared to 29% of the male cases. This is most likely due to the higher percent of transmission from heterosexual contact in women when compared to men, as documenting heterosexual risk is more difficult than documenting other risks. In such cases, there needs to be evidence that the partner is HIV positive or is at a high risk of contracting HIV, for example, the partner is a bi-sexual male or intravenous drug user, or has received a blood product. Many of the cases without an identified a current risk, will have a risk determined as more information about the case is gathered.

Table 10. Number and Proportion of Reports by Gender and Region (2000)

Region		Males		Females	
		Number	%	Number	%
HIV					
Northwest	34	25	73.5	9	26.5
Northern	217	143	65.9	74	34.1
Southwest	61	43	70.5	18	29.5
Central	159	111	69.8	48	30.2
Eastern	324	225	69.4	99	30.6
AIDS					
Northwest	46	28	60.9	18	39.1
Northern	273	228	83.5	45	16.5
Southwest	82	53	64.6	29	35.4
Central	200	142	71.0	58	29.0
Eastern	297	227	76.4	70	23.6

A risk analysis of cases, excluding cases with no risk information, identified the following:

1) the leading risk for males in 2000 was men having sex with men (61% of all male cases with a known risk), followed by heterosexual contact (17%) and intravenous drug use (13%); 2) the leading risk for females was heterosexual contact (62%), followed by intravenous drug use (29%); 3) receiving blood products was a low risk for both genders, 1% for females and less than 1% for males; and 4) five percent of male cases listed both having sex with other men and intravenous drug use as risks.

Race/Ethnicity Differences

Clear racial and ethnic disparities exist in HIV and AIDS. Until 1993, the majority of new AIDS cases were reported among whites. However, the number and rates of AIDS in whites have decreased since 1995, and beginning in 1993, blacks accounted for the largest incidence of any racial ethnic group. Since reporting began for HIV, black cases have exceeded white cases. The disparity between black and white cases for both HIV and AIDS continues to grow. When population sizes of the different races are taken into account, the true extent of the disparity can be seen. Blacks account for only 19% of Virginia's population, but accounted for 68% of Virginia HIV cases in 2000 and 63% of the AIDS cases. Whites account for 70% of Virginia's population, but only accounted for 29% of the HIV cases in 2000 and 31% of the AIDS cases. This computes to an incidence rate of 39.5 cases of HIV per 100,000 for blacks compared with

Table 11. HIV/ AIDS Incidence and Rates by Race (2000)

Race	HIV		AIDS	
	Incidence	Rate	Incidence	Rate
White	192	3.9	277	5.6
Black	546	39.7	571	41.5
Hispanic	39	11.8	44	13.4
Other	13	4.6	12	4.3
Total	799	11.3	905	12.8

3.9 per 100,000 for whites (Table 11). This means a black is ten times more likely to be reported with HIV than a white. Similarly, the rate of AIDS among blacks was seven times that among

whites – 41.5 per 100,000 blacks, compared with 5.6 per 100,000 of whites. Hispanic incidence rates fall in between with 11.8 per 100,000 for HIV and 13.4 for AIDS in 2000.

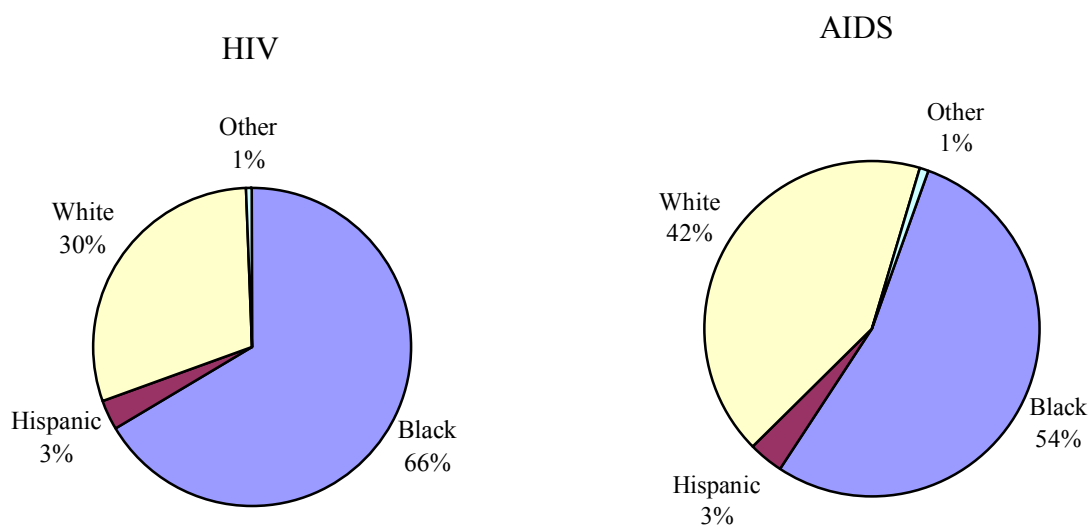
As stated earlier, overall incidence for HIV and AIDS are declining, but incidence is not declining for all racial ethnic groups (Table 12). From 1996 to 2000 whites showed the largest decrease in both HIV and AIDS with a 25% drop in HIV reports and 36% drop in AIDS reports. During the same period, blacks declined 20% for HIV and 21% for AIDS. Hispanics, on the other hand, increased 35% for HIV and 8% for AIDS in 2000. Much of the increase in Hispanic cases can be attributed to population increases. Hispanics are the fastest growing racial/ethnic group in Virginia. Based on the 2000 census, the Hispanic population grew 106% since 1990. Planning and resource allocation should take this population growth into account. The relatively small number of cases in Asian/Pacific Islanders and American Indian/Alaskan Natives makes further interpretation of these racial/ethnic groups difficult. Nevertheless, when these groups are combined (as “other” in Table 12), it can be seen that HIV infection rates indicate patterns that should illicit further prevention activities. From 1996 to 2000, HIV increased 113% and AIDS increased 8% in this ‘other’ group.

Table 12. Cases by Race/Ethnicity (1996-2000)

	Total	White	Black	Hispanic	Other
HIV					
1996	968	255	679	26	8
1997	980	236	702	29	13
1998	813	209	559	30	15
1999	913	235	632	38	8
2000	795	192	543	35	17
AIDS					
1996	1,199	430	717	40	12
1997	1,161	384	723	46	8
1998	957	292	634	25	6
1999	906	261	599	41	5
2000	898	277	565	43	13

The net result of these reporting trends is shown in Figure 9. Although rates and relative proportions vary over time, blacks have made up the majority (54%) of cumulative AIDS case reports. And blacks have made up nearly two-thirds (66%) of cumulative HIV case reports. As the growth of this epidemic slows within the white community, it becomes more expansive within minority communities. These changes in the demographics of HIV/AIDS have profound implications for service planning and delivery and should continue to be taken into account throughout all components of the Commonwealth's HIV/AIDS care and prevention efforts.

Figure 8. HIV/AIDS Reports by Race (Cumulative)



Among the racial categories there are differences in gender distribution. White females made up only 18% of the white HIV cases in 2000, a decrease of five percentage points since 1996 (Table 13). Black females make up 35% of all black HIV cases, an increase of four percentage points since 1996. The proportion of black female cases to all black cases is almost double the proportion of white female cases to all white cases. Hispanic and 'other' females make up 40% and 32% of their respective cases. The percentages for Hispanic and 'other' females have varied greatly over the past five years. For example in 1998, only 10% of the Hispanic cases were female, and in 1999, 0% of the 'other' category were female. This large variance is due to the relatively small number of females in these categories. A small change in the number of females can cause a large change in the percentage of total cases.

Table 13. Case Reports by Race/Ethnicity and Gender (2000)

	Total		Males		Females	
	Number	Rate/ 100,000	Number	Rate/ 100,000	Number	Rate/ 100,000
HIV						
White	192	3.9	158	6.5	34	1.3
Black	546	39.7	353	52.3	193	27.5
Hispanic	39	11.8	23	14.2	16	9.5
Other	13	3.2	7	3.5	6	2.9
Total*	799	11.3	549	15.8	250	6.9
AIDS						
White	277	5.6	240	9.9	37	1.5
Black	571	41.5	394	58.4	177	25.2
Hispanic	44	13.4	36	22.3	8	4.8
Other	12	2.9	10	7.8	2	1.5
Total*	905	12.8	681	19.6	224	6.2

*Totals include cases reported with unknown race

Gender-based differences in racial/ethnicity rates also vary by regions, as shown in Table 14. HIV incidence rates vary in the five regions within the racial-gender groups. For white males the rates vary from 1.9 in the Southwest Region to 10.2 in the Central Region. Black males have a rate of 21.7 in the Southwest Region compared to 80.7 in the Northern Region. These are dramatic ranges: in Northwest Virginia, the rate of HIV reports among black males is 18 times as the rate among white males, and the rate of AIDS reports is 6 times as great for black males as for white males. Among white females, HIV rates vary from 0.2 in the Northwest Region to 3.0 in the Eastern Region. For blacks the range is from 15.3 in the Northwest Region and 53.7 in the Northern Region. In the Northwest Region, a black female is 67 times more likely than a white female to be reported with HIV.

Despite the downward trend in new case reports across the Virginia population, clear racial and ethnic differences can be observed. Simply put, in Virginia as throughout the United States, the AIDS epidemic shows signs of slowing down among whites but is clearly accelerating among persons of color relative to whites. This is most prominent among African Americans but also

reflected within Hispanics, the only other population of color represented in sufficient numbers in Virginia to support comparative analysis.

Table 14. HIV/AIDS Incidence Rates by Race and by Region (2000)

	Males			Females		
	Total	White	Black	Total	White	Black
HIV						
Statewide	15.8	6.5	52.3	27.5	1.3	27.5
Northwest	5.0	1.9	33.8	15.3	0.2	15.3
Northern	16.1	7.5	80.7	53.7	1.0	53.7
Southwest	6.7	4.6	21.7	17.0	0.9	17.0
Central	18.6	10.2	35.9	21.0	1.5	21.0
Eastern	27.0	8.6	66.1	27.9	3.0	27.9
AIDS						
Statewide	19.6	9.9	58.4	6.2	1.5	25.2
Northwest	5.6	3.3	19.9	3.5	0.9	22.9
Northern	25.7	22.2	69.4	4.9	2.0	26.9
Southwest	8.3	4.0	42.1	4.3	1.8	24.8
Central	23.8	7.2	57.8	9.8	1.0	28.0
Eastern	27.2	9.5	66.9	8.1	1.3	23.1

Age-Related Differences

Age-related differences are also apparent in the number and rates of reported new cases (Table 15). The age used in this analysis is the age of the person at the initial diagnosis of HIV or AIDS. In 2000, two-thirds of all new HIV cases (68%) were reported among individuals 20 to 39 years of age. For AIDS in 2000, 65% of cases were reported among individuals aged 30 to 49. This shift in age is most likely due to the length of time from infection to an AIDS diagnosis.

Over the past five years, there has been a shift in the age of HIV diagnosis (Table 16). All age groups except the 50-plus have experienced an overall decrease in the number of reported cases.

Table 15. HIV/AIDS Incidence and Rates by Age (2000)

Age Groups	HIV		AIDS	
	Number	Rate/ 100,000	Number	Rate/ 100,000
0-12	3	0.2	4	0.3
13-19	28	4.1	4	0.3
20-29	230	23.0	154	17.5
30-39	312	27.9	425	38.0
40-49	155	14.1	288	26.2
50+	70	3.6	94	4.9
Total	799	11.3	905	12.8

The 50-plus age group increased 67% (from 42 cases in 1996 to 70 cases in 2000). For the same time period, the 40 to 49 age group decreased in total cases, but increased in percentage of all cases. The largest decrease was in the 20 to 29 age group, decreasing 107 cases (from 337 cases in 1996 to 230 cases in 2000). Although the highest morbidity group is the 20 to 39 age group for HIV, there has been a trend toward the older groups. This shift should be taken into account when planning prevention efforts. Age of diagnosis for AIDS cases has remained steady.

Table 16. HIV Incidence by Age (1996 – 2000)

	<u>0-12</u>		<u>13-19</u>		<u>20-29</u>		<u>30-39</u>		<u>40-49</u>		<u>50+</u>		
	Cases	Percent	Cases	Percent	Cases	Percent	Cases	Percent	Cases	Percent	Cases	Percent	Total*
1996	12	1.2	41	4.2	337	34.4	378	38.6	170	17.3	42	4.3	980
1997	12	1.2	34	3.4	279	28.1	390	39.3	219	22.1	58	5.8	993
1998	12	1.5	28	3.4	210	25.5	343	41.6	177	21.5	55	6.7	825
1999	4	0.4	45	4.9	255	27.8	347	37.8	199	21.7	67	7.3	917
2000	3	0.4	28	3.5	230	28.8	312	39.0	155	19.4	70	8.8	799

* Total includes cases reported with an unknown age

Age-based proportions also differ by gender (Table 17). Thirty-six percent of female HIV cases are diagnosed in the 13 to 29 age group. This compares to 30% of male cases in the same age

group. Females also have a higher percentage in the 50-plus group (11% for females and 8% for males). Males account for higher percentage in the 30 to 49 age group (61% for males and 52% for females). These differences should be taken into account when prevention efforts are gender specific.

Table 17. HIV/AIDS Cases by Gender and Age (2000)

	HIV				AIDS			
	Male		Female		Male		Female	
	<u>Number</u>	<u>Percent</u>	<u>Number</u>	<u>Percent</u>	<u>Number</u>	<u>Percent</u>	<u>Number</u>	<u>Percent</u>
0-12	1	0.2	2	0.8	3	0.4	4	1.8
13-19	16	2.9	12	4.8	1	0.1	2	0.9
20-29	152	27.7	78	31.2	73	10.7	49	21.9
30-39	219	39.9	93	37.2	330	48.5	91	40.6
40-49	118	21.5	37	14.8	193	28.3	54	24.1
50+	42	7.7	28	11.2	81	11.9	24	10.7
Total	549		250		681		224	

H**IV-Related Deaths**

HIV-related illnesses were the 10th leading cause of death in Virginia in 1994; the first time HIV-related illnesses were among the top 10 leading causes in the state. In 1995 the number of deaths increased, making HIV/AIDS the 8th leading cause of death. New treatment regimens were introduced in 1995-96 and since that time, HIV-related deaths have decreased in number and ceased to be among the 10 leading causes of death in the Commonwealth. By 1999 (the last year for which data were available) the number of HIV-related deaths had declined to 263 (Table 18), from a high of 811 deaths in 1995. This numerical decrease translates into declining rates: from a high of 12.4 deaths per 100,000 population in 1995, the HIV-related death rate declined to 3.9 per 100,000 in 1999.

Numbers and rates of HIV-related deaths vary dramatically by race, with blacks much more likely than whites to die from HIV/AIDS. In 1995, the rate of HIV-related deaths in blacks (32.2) was 4.6 times that in whites (7.6), and in 1999, this discrepancy had increased two-fold. The rate

of 1999 HIV/AIDS deaths in blacks was seven times that in whites (13.0 per 100,000 in blacks, 1.6 per 100,000 in whites).

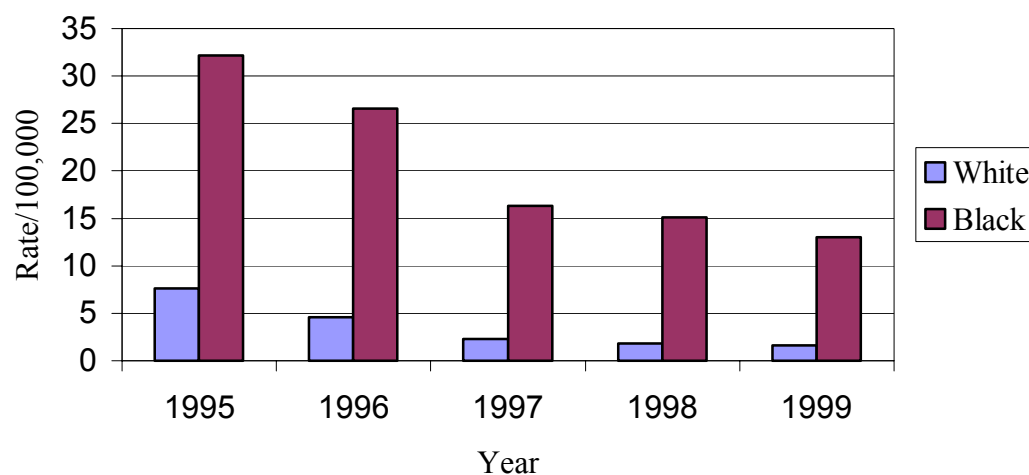
Although the downward trend for rates of HIV-related deaths has declined among blacks as among other Virginians, it is not dropping as significantly as the rate in whites (Figure 13). Among whites, the 1997 rate was one-third of what it had been in 1995, the peak year of reported HIV-related deaths. For blacks however, the 1997 rate had dropped by only half during this two-year period.

Table 18. HIV-Related Deaths by Race/Ethnicity with Rates (1995 – 1999)

Year	Race/Ethnicity*							
	White		Black		Other		Total	
	#	Rate / 100,000	#	Rate / 100,000	#	Rate / 100,000	#	Rate / 100,000
1995	384	7.6	419	32.2	8	4.1	811	12.4
1996	235	4.6	350	26.6	6	3.0	591	8.9
1997	117	2.3	217	16.3	1	0.5	335	5.0
1998	94	1.8	204	15.1	1	0.5	299	4.4
1999	84	1.6	178	13.0	1	0.5	263	3.9

* The Virginia Center for Health Statistics uses the race categories white/black/other. Hispanic is an ethnicity for which HIV-related death data were not published.

Figure 9. HIV/AIDS Death Rates for Whites and Blacks (1995 – 1999)

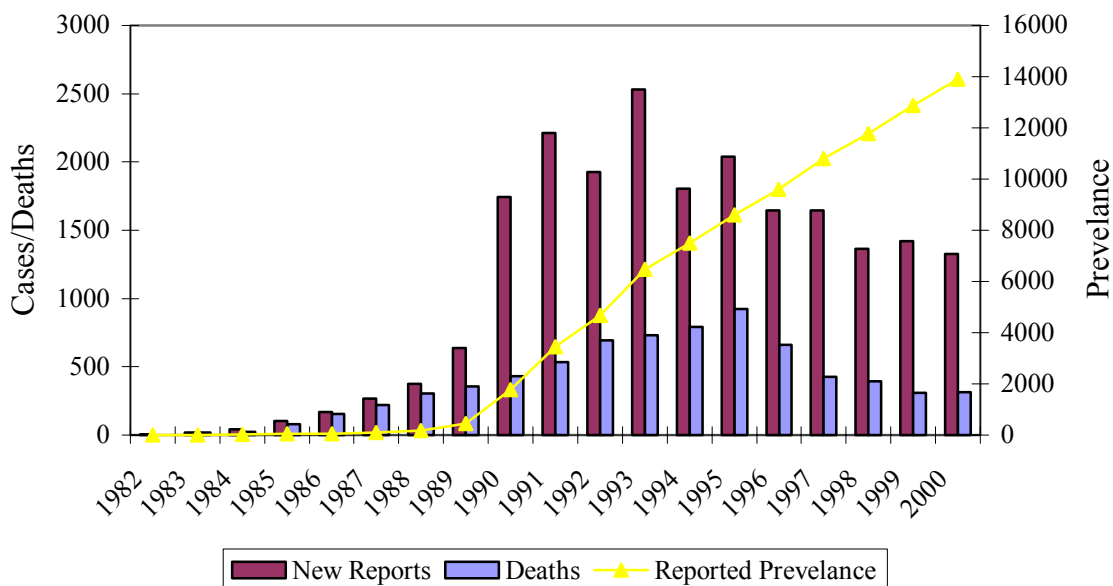


Prevalence

Prevalence is the number of people affected with a specified disease at a specific point of time. For HIV, two factors affect the prevalence; first, the number of new cases diagnosed (increases prevalence) and second, the number of deaths of people infected with HIV (decreases prevalence).

Reported HIV prevalence in Virginia is the number of people reported to the Virginia Department of Health with HIV or AIDS listed as living. Each year, more new people reported to be infected than there are reported deaths of HIV infected people. The net result is each year the prevalence increases (Figure 11). Prevention efforts need to account for the increasing number of infected individuals. The sharp increase in prevalence in 1990 is due to the mandatory reporting of HIV in 1989. The reported prevalence in Virginia as December 31, 2000 is 13,462. Reported prevalence does not include unreported cases or people unaware of there status.

Figure 10 Reported Prevalence of HIV Infection in Virginia.



Estimated prevalence is an attempt to include unknown cases (both unreported cases and cases of people unaware of their status). CDC estimates indicate a total of 800,000 to 900,000 persons currently living with either HIV or AIDS in the United States at the end of 1998 (the most current estimate). Based on current Census numbers, Virginia's population is 7,078,515 or 2.5%

of the national population. Extrapolating using CDC's national prevalence estimates and the Census Bureau's population numbers, Virginia's estimated prevalence is between 20,122 and 22,637.

Using Virginia's reported prevalence (13,462) and Virginia's estimated prevalence (20,122 to 22,637), there are between 6659 and 9174 unreported cases of HIV infection in Virginia. This discrepancy between estimated and reported prevalence include both, diagnosed cases that have failed to be reported and undiagnosed cases. It is difficult to extrapolate what percentage of unreported cases are due to failures to report and what percentage of unreported cases are to undiagnosed cases. Both categories of unreported cases cause barriers to prevention efforts.

□ Section 4.

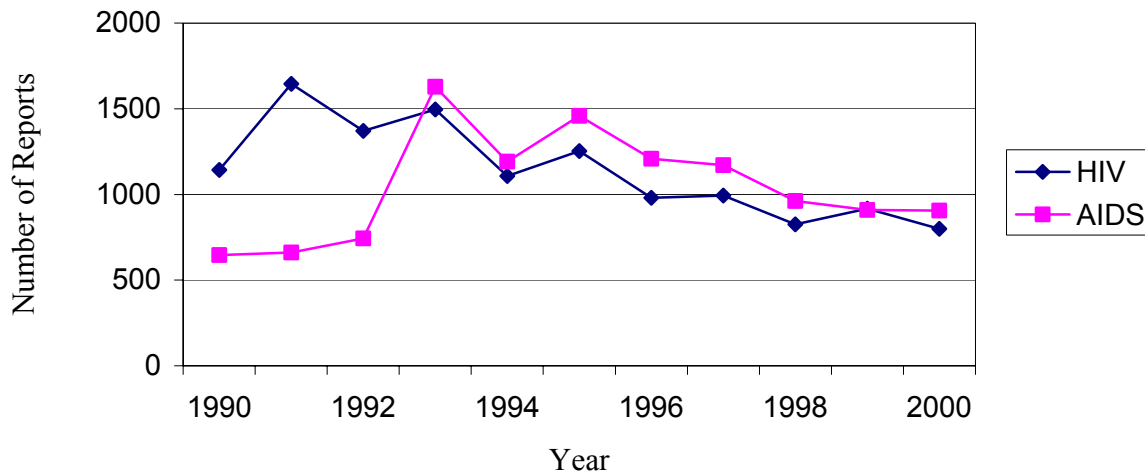
Priority Populations

In 2000, the Virginia HCPC identified seven priority populations to receive HIV primary and secondary prevention interventions -- racial/ethnic minorities, men who have sex with men, heterosexuals, injecting drug users, youth, incarcerated persons/inmates, and persons living with HIV/AIDS. Sex workers, persons with mental illness or mental retardation, homeless persons, and transgendered persons were included as populations of special interest. These populations were selected for VHPC attention because population-based data or other reliable information indicated that they were at heightened risk of acquiring or transmitting HIV infection due to their behaviors and other personal and/or systemic characteristics. Populations at special risk and rates of other sexually-related health conditions are reported in Section 5.

Where population-based data are unavailable, the best information available from other sources is used to characterize the patterns and relative risks associated with acquiring and preventing HIV/AIDS in identified populations. Epidemiological data reported in earlier sections are referenced and in general are not repeated in this section, with exceptions for total numbers and percentages in certain instances.

For optimal effectiveness, planning and implementation of prevention interventions must be carried out with awareness of population differences. Interventions that work well for one or more of the identified priority populations may be ineffective or simply impossible to carry out with others. In its advisory capacity to VDH, the Virginia HCPC puts particular emphasis on exploring and understanding the challenges that must be faced and overcome if prevention programs are to be successful. In addition to review of epidemiological and other population-based data, the VHPC has sponsored and participated in a series of survey and focus group studies to capture information that would not otherwise be available. Results from these studies are supplemented by research conducted in other states to expand on limited population-based data and to identify predictable barriers or challenges to effective prevention efforts.

Figure 11. Trends in New Cases of HIV/AIDS (1990-2000)



HIV/AIDS Reporting System (HARS) data provide reliable information about rates of transmission for several of these priority populations. The overall annual numbers of case reports for HIV and AIDS have steadily decreased after 1993 (Figure 12). Transmission by male-to-male sex continues to be most frequently reported, yet this mode has taken a downward trend while other transmission modes are more frequently reported than in the past (Table 19 and Figure 13). Cumulative data through 2000 show that 35% of HIV reports and 51% of AIDS reports were attributed to MSM transmission. Injecting drug use has accounted for 19% of cumulative HIV reports and 18% of cumulative AIDS reports, followed by heterosexual transmission (19% of cumulative HIV reports and 13% of cumulative AIDS reports).

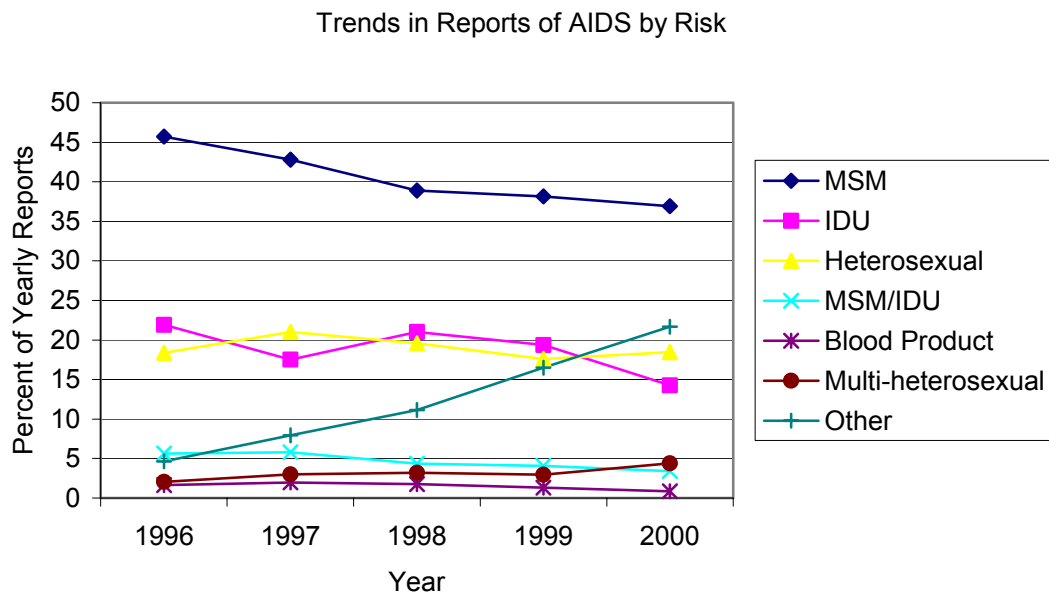
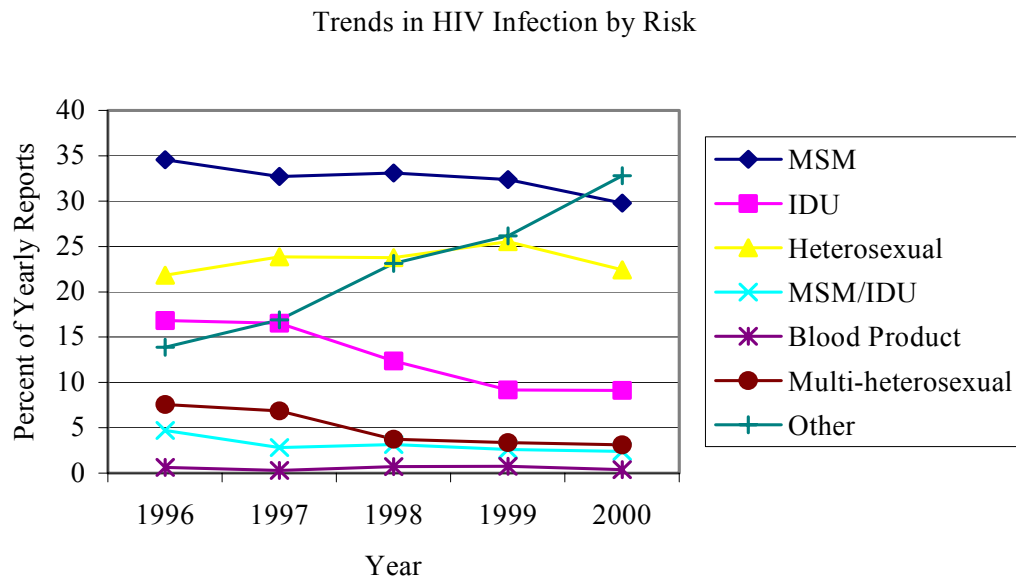
In 2000 the percentage of new AIDS cases attributed to MSM transmission had decreased to 37% of all reports, now just under twice the proportion of cases as heterosexual transmission (19%). MSM transmission represents nearly three times as many cumulative AIDS cases as injecting drug use. In contrast to MSM and intravenous drug transmission, the proportions of 2000 reported cases of HIV and AIDS attributed to heterosexual transmission is higher than the cumulative percentages.

Table 19. New HIV/AIDS Cases by Transmission Modes

	HIV				AIDS			
	2000		Cumulative		2000		Cumulative	
	#	%	#	%	#	%	#	%
MSM	238	29.8	4,508	35.3	334	36.9	6,589	51.0
IDU	73	9.1	2,443	19.1	129	14.3	2,323	18.0
Heterosexual	179	22.4	2,409	18.9	167	18.5	1,719	13.3
MSM/IDU	19	2.4	629	4.9	31	3.4	702	5.4
Blood Product	3	0.4	234	1.8	8	0.9	350	2.7
Multi-Heterosexual	25	3.1	704	5.5	40	4.4	210	1.6
Pediatric	3	0.4	136	1.1	8	0.9	183	1.4
No Identified Risk	117	14.6	630	4.9	62	6.9	291	2.3
Undetermined	142	17.8	1,085	8.5	126	13.9	542	4.2
Total Count	799	100.0	12,778	100.0	905	100.0	12,909	100.0

Transmission mode patterns for new HIV reports in 2000 are somewhat different than for new reports of AIDS. Although MSM accounts for the highest HIV proportion (30%), heterosexual transmission was reported over twice as often as injecting drug use – 22% and 9%, respectively. For HIV, heterosexual transmission has become a major concern, resulting in a need for increased attention to prevention education and interventions with the general population of Virginians, many of whom may underestimate their risk of becoming infected with HIV.

Figure 12. Trends in HIV/AIDS Transmission (1996-2000)



Racial and Ethnic Minorities

Changes in transmission mode patterns have particular relevance when designing prevention interventions, as these patterns show clear differences related to race and ethnicity. In order to be effective, prevention education must be carefully tailored to the personal and cultural characteristics of target populations, and the rapidly changing face of HIV/AIDS exemplifies the scope and extent of current challenges. Differences in race/ethnicity patterns presented in Sections 2 and 3 of the report are summarized here but not repeated in detail.

Although it was not the case in the epidemic's first decade, since 1993, blacks have accounted for higher proportions of new HIV and AIDS cases than whites. By 2000, the prevalence rate of AIDS among blacks was 5.6 times the rate among whites, and the rate for HIV was 8.2 times as

Table 20. Number and Percentage of New HIV/AIDS Cases by Race/Ethnicity and Gender

	1996		1997		1998		1999		2000	
	#	%	#	%	#	%	#	%	#	%
HIV										
White Males	198	20.2	199	20.0	166	20.1	194	21.2	158	19.8
White Females	58	5.9	39	3.9	44	5.3	42	4.6	34	4.3
Black Males	471	48.1	466	46.9	371	45.0	399	43.5	353	44.2
Black Females	217	22.1	245	24.7	197	23.9	236	25.7	193	24.2
Hispanic Males	18	1.8	25	2.5	28	3.4	27	2.9	23	2.9
Hispanic Females	10	1.0	5	0.5	3	0.4	11	1.2	16	2.0
Other Males	4	0.4	11	1.1	11	1.3	8	0.9	15	1.9
Other Females	4	0.4	3	0.3	5	0.6	0	0.0	7	0.9
AIDS										
White Males	398	32.9	345	29.5	260	27.1	233	25.6	240	26.5
White Females	35	2.9	40	3.4	33	3.4	28	3.1	37	4.1
Black Males	550	45.5	537	45.9	456	47.5	432	47.5	394	43.5
Black Females	174	14.4	194	16.6	181	18.8	170	18.7	177	19.6
Hispanic Males	32	2.6	40	3.4	20	2.1	31	3.4	36	4.0
Hispanic Females	8	0.7	7	0.6	5	0.5	10	1.1	8	0.9
Other Males	10	0.8	6	0.5	6	0.6	4	0.4	11	1.2
Other Females	2	0.2	2	0.2	0	0.0	1	0.1	2	0.2

great (Table 5, p. 15). Rates are also increasing among Hispanics, compared to whites, although not as dramatically as among blacks. Within-group differences are especially prominent for black females, for whom AIDS is increasing at much greater rates, and for white males, for whom rates are decreasing. Numbers and percentages of new HIV and AIDS cases are shown in Table 20, where these and other race/ethnicity/gender patterns can be observed.

The net result of race/ethnicity-based reporting patterns is most dramatically reflected in the characteristics of persons living with HIV/AIDS, shown on p. 15-16 of the report. The prevalence rate of AIDS among black males is 177.3 per 100,000, compared with 38.9 per 100,000 for white males. Prevalence rates for HIV infection are disproportionately even higher for black males, compared with white males – 245.5 and 36.7, respectively. Rates for Hispanic males are also much higher than whites, although not to as great an extent as for blacks. Differences are also dramatic between rates for black and white females, as black females have a prevalence rate that is sixteen times higher than white females for AIDS and fourteen times higher than white females for HIV.

In 2000, blacks had the highest number of reports of AIDS and the highest rate of AIDS in all regions of Virginia. The number of reports in Hispanics and other races was so small in most areas that rates are questionable, the exception being the Northern Region. In the Northern Region, 11% of reports of AIDS were in Hispanics for a rate of 13.9 per 100,000: 23.4 per 100,000 Hispanic males and 4.7 per 100,000 Hispanic females.

Black females had a much greater risk for AIDS in 2000 than white females, and this varies slightly by geographic region. Black males were also at a higher risk than white males in all regions, from approximately three times the risk in Northern to eleven times the risk in the Southwest Region.

As with AIDS, blacks, both male and female, had the highest rate of HIV infection in 2000 in all regions of Virginia. The rates were the highest in the Northern Region for both black males and females. For whites, the rates were highest in the Central Region for males and in the Eastern Region for females.

In 2000, 85% (33/39) of reports of HIV in Hispanics were from the Northern and Eastern Regions for rates of 10.5 per 100,000 Hispanics and 20.9 per 100,000, respectively.

Asian/Pacific Islanders were the only racial group reported with HIV infection in the other race category in 2000, and 77% of the reports were from the Northern Region. The 2000 rate for HIV infection in Asian/Pacific Islanders in that region was 5.7 per 100,000. Females accounted for 60% of the reports (6/10) in the Northern Region for a rate of 6.7 per 100,000 Asian/Pacific Islander females.

Prevention Challenges. Two statewide surveys conducted by SERL of white, black, and Hispanic MSM have shown how condom use and sexual behavior vary based on culture and underline the importance of culturally congruent interventions. A 1997 survey of MSM in Virginia collected data from 428 Caucasian and 198 African American men, of which about 85% resided in urban areas. A similar survey, conducted in 1999, collected information from 291 Latino men in Northern Virginia, Richmond, and Hampton Roads.

In the above mentioned studies, black respondents reported certain behaviors more often than did white and Hispanic respondents, including being in a primary relationship with a woman. And, as compared to whites, black respondents always or usually included anal contact when having sex with another man (52% of blacks versus 31% of whites), and had less frequent oral sex with other men (76% of whites reported oral sex always or usually, compared to 48% for blacks).¹ Latino MSM in Virginia urban areas reported inconsistent use of condoms during anal sex and lower rates of condom use than white and black MSMs – 30% of Hispanic respondents reported condom use never or only sometimes.² Hispanic MSM were more likely than others to consider themselves at relatively high risk of becoming infected – 32% of Hispanics rated their risk as low, compared with 72% of white and black MSM combined. Among white and black respondents, even those who engaged in high-risk behaviors perceived a low risk of infection. Between 24%-29% of Latino and African American respondents reported paying someone else for sex or being paid for sex themselves, a rate double that of Caucasians.

It is not only important to understand the differences in sexual behaviors among different ethnic groups of gay/bisexual men when developing HIV prevention strategies, but also the social and cultural factors that may attribute to a person's ability to access prevention programs. Black gay/bisexual men were less likely to disclose their sexuality to family and friends, participate in gay/bisexual groups and organizations, and have gay/bisexual friends.³ As white MSM became more educated, they were more likely to disclose their sexuality, but for black MSM, disclosure rates dramatically decreased with more education. This could be due to the fear of further prejudice of being gay/bisexual in addition to being African American. Similarly, the Latino MSM study stated that less than half (45%) of the sample reported being associated with a gay/bisexual organization.

Since gay/bisexual blacks and Hispanics are less likely than whites to participate in gay/lesbian/bisexual organizations and have gay friends, they are missing opportunities to utilize HIV prevention, education and support services. Utilizing organizations and networks within the culture then becomes the primary mode of delivering HIV information. For blacks, faith organizations may be a safe place to do this, if churches and mosques are willing to be proactive in the fight against AIDS. Although African American churches and mosaics have a history of social activism, they have been criticized for their slow response to the HIV epidemic.

As found in a study of African American faith organizations conducted by SERL for the VHPC, clergy gave several strong reasons for the lack of response from their communities, including lack of knowledge of HIV, unhealthy lifestyles or social environments and denial regarding HIV infection. Reasons for their reluctance to respond to the epidemic included the complexity of addressing sensitive issues (sexuality, HIV, drug use), that discussion would condone sexual behaviors, and that sexual behaviors and alternative lifestyles were inappropriate to discuss in a church setting. Clergy respondents stated that the churches cared, but that caring did not necessarily translate into action. However, they did believe that many churches and mosaics would be able to initiate or expand HIV prevention efforts if there was HIV training for clergy, technical assistance and resources to assist in the efforts.⁴ Subsequent efforts on behalf of the VHPC demonstrated that this was indeed the case, and efforts to further engage faith communities are ongoing in Virginia.

Key Points

- In Virginia as in the country as a whole, the HIV/AIDS epidemic is increasingly about people of color – relative to whites, rates of infection are increasing for blacks and Hispanics.
- Among black Virginians, HIV/AIDS rates are increasing most dramatically among women, and this pattern has implications for future increased rates among black children and youth.
- Cultural differences in sexual behavior patterns, understanding and disclosure of sexual orientation effects the rates and manner in which HIV is transmitted among race/ethnic groups.
- Engaging community institutions, such as faith organizations, is particularly important when developing effective prevention programs for non-white groups.

Men who Have Sex with Men (MSM)

Although men reporting sex with other men still account for the most new reports of AIDS and HIV infection in Virginia, MSM reports of AIDS have decreased substantially in number and proportion of total reports in the last five years, as shown in Figure 13. Sixty-one percent of all AIDS cases reported to date among males have resulted from male-male sex, and in 2000 this transmission mode accounted for 49% of new AIDS cases in males. In 2000, black and white males with HIV/AIDS are almost equally likely to report MSM as the probable mode through which they became infected – 48% of black males, compared with 47% of white males. Thirty-nine percent of MSM cumulative reports have been among black males, 57% among white males, 3% among Hispanic males, and less than one percent among males of other races <1%.

Racial and ethnic patterns are somewhat different for HIV than for AIDS and may provide a more accurate picture of recent behaviors than do reports of AIDS. Among MSM and MSM/IDU HIV reports, the proportion of whites among new 2000 cases (42%) was lower than cumulative cases (44%) (Table 21). No change has occurred among blacks, as cumulative HIV cases and 2000 cases remain stable at 53%. The representation of Hispanic men among new HIV cases also increased, from 2% of cumulative case reports to 3% of 2000 new cases.

Table 21. Distribution of MSM and MSM/IDU HIV Reports by Race

	Cumulative MSM Reports of HIV		2000 MSM Reports of HIV	
	Number	Percentage	Number	Percentage
White	2,281	44.4	109	42.4
Black	2,712	52.8	135	52.5
Hispanic	98	1.9	7	2.7
Other	30	0.6	4	1.6
Unspecified	16	0.3	2	0.8
Total	5,137	100.0	257	100.0

Transmission through male-male sex and intravenous drug use are reported as both separate and joint risk categories in HARS (MSM/IDU). Although the joint category represents a fairly small proportion of all reported cases, individuals who fit this description may face special challenges in HIV/AIDS prevention. Fortunately, IDU-associated MSM reports have decreased in frequency since the early 1990s and recently have accounted for fewer than 3% of new HIV reports – 7% of new MSM HIV reports in 2000, compared to 32% of cumulative MSM HIV reports.

In looking at MSM and MSM/IDU HIV case reports in Table 22, it can be seen that well over three-quarters of all reported cases (between 1996-2000) have occurred among males 20-39 years of age (34% among 20-29 year olds and 42% among those 30-39). Since 1996, there have been some noticeable although not dramatic changes. Changes are most evident in the 20-29 and 50+ age ranges. Although males 20-29 made up almost 40% of all new MSM-related HIV reports in 1996, this age group saw a decline in percentage of reports from 1996-1998, before rising again to 28% in 1999 and 34% in 2000. Males 50 and older represented over 6% of MSM HIV reports in 1998, a larger proportion than other years. Similarly, reports of males 40-49 rose to 22% in 1999 and then dropped significantly in 2000. The number of reports in teens have fluctuated with no clear trend seen, and among teenage males, MSM-related behavior is the most frequent risk behavior for HIV/AIDS, accounting for 49% of all reports (not shown).

Table 22. MSM- and MSM/IDU-HIV Reports (1996-2000)

	Percentage of Reports in Various Age-Groups				
	13-19	20-29	30-39	40-49	50+
1996	1.8	39.0	39.2	17.1	2.9
1997	1.4	31.4	43.6	18.4	5.1
1998	3.0	27.1	44.8	18.7	6.4
1999	4.4	28.3	40.5	22.1	4.7
2000	4.3	33.9	43.2	14.4	4.3
Total	2.8	32.2	42.1	18.3	4.6

At the end of 2000, 32% of Virginians living with HIV/AIDS had reported MSM or MSM/IDU as their probable transmission mode. They represented 53% of all estimated persons living with AIDS and 40% of persons living with HIV.

Table 23. Virginians Living With HIV or AIDS Acquired through Male-Male Sex

	Region					
	Northern	Eastern	Central	Northwest	Southwest	Total
Number	2,308	2,753	2,120	597	716	8,494
Rate/100,000 Population	127.1	160.3	174.0	58.6	54.7	120.0
Ratio	1 per 786	1 per 624	1 per 575	1 per 1,708	1 per 1,827	1 per 833

The total impact and regional differences of MSM and MSM/IDU transmission of HIV is shown in Table 23. Prevalence rates are highest in Central and Eastern Virginia for persons living with HIV/AIDS who acquired the disease through male-male sex. These rates are nearly three times the rates in Northwest and Southwest Virginia combined and over 20% higher than in Northern Virginia. In Virginia as a whole, 32% of all persons living with HIV/AIDS who reported MSM transmission lived in Eastern Virginia when diagnosed – 27% lived in Northern Virginia and 25% in Central Virginia, and only 15% reported from the Northwest and Southwest Regions

combined. Prevalence rates for persons living with HIV/AIDS reflect this same pattern and ratios range from 1 in <1,000 in Northern, Eastern and Central Regions to approximately 1 in 3,500 persons, collectively, in the Northwest and Southwest Regions.

Key Points

- Reports of MSM-associated HIV and AIDS are decreasing but remain the greatest behavioral risk for HIV infection among all race/ethnicities.
- The Eastern, Central and Northern Regions remain the areas with the highest MSM behavior and greatest prevalence of infected MSMs.
- Teenagers and persons in their twenties and thirties should be targeted for prevention efforts related to MSM behaviors.

Heterosexual Transmission

While overall numbers of new HIV/AIDS cases have been decreasing, the relative proportion of cases transmitted through heterosexual activity has increased for both AIDS and HIV. In 1990, transmission through heterosexual activity accounted for only 4% of all AIDS reports and 14% of reports of HIV infection. In 2000 however, heterosexual activity was the reported transmission mode for 18% of new AIDS cases and 22% of new cases of HIV.

Heterosexual activity with an HIV-infected male is the most frequently reported risk factor for females for both AIDS and HIV. Females have consistently reported heterosexual activity with an HIV-infected partner in approximately 45% of all new case reports, compared with a dramatically lower proportion of male cases -- 11% of cumulative AIDS cases and 12% of cumulative HIV cases.

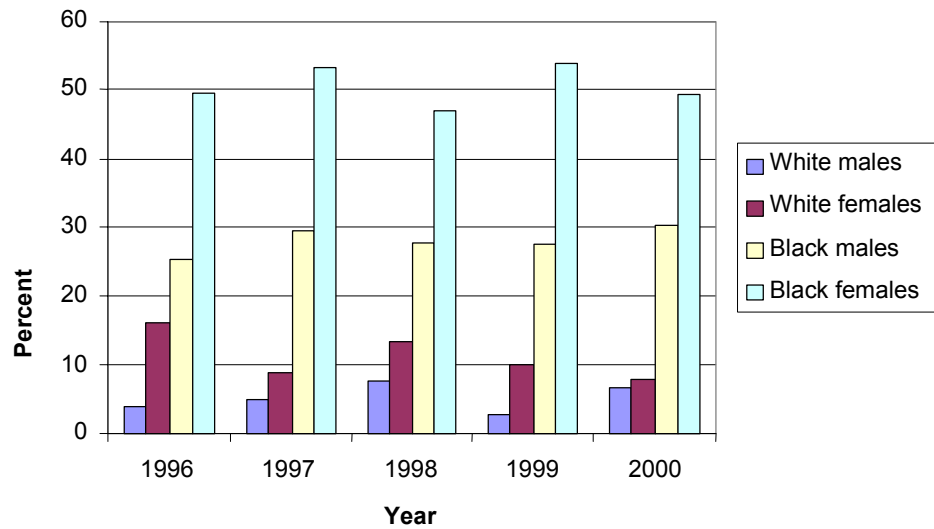
Table 24. Distribution of Heterosexual Risks for Cumulative HIV Reports (1989-2000)

	Females		Males	
	Reports	% Total	Reports	% Total
Sex with someone with HIV/AIDS	961	59.2	593	75.4
Sex with an IDU	522	32.2	176	22.4
Sex with a bisexual male	108	6.7	0	0.0
Sex with a hemophiliac	16	1.0	0	0.0
Sex with someone with HIV/AIDS & transfusion	16	1.0	17	2.2
Total Heterosexual	1,623	100.0	786	100.0

During the period of 1989-2000, sex with an HIV-positive male was reported by more than half (59%) of the cumulative total of women who contracted HIV through heterosexual activity (Table 24). Thirty-two percent of women who contracted HIV through heterosexual activity reported sex with an injecting drug user. Proportionately, men were much less likely than women to contract HIV through heterosexual activity. Nevertheless, for 75% of males who did so during 1989-2000, sex with an HIV-positive woman was the reported mode of transmission, compared with 22% percent who reported having sex with an injecting drug user as the transmission mode.

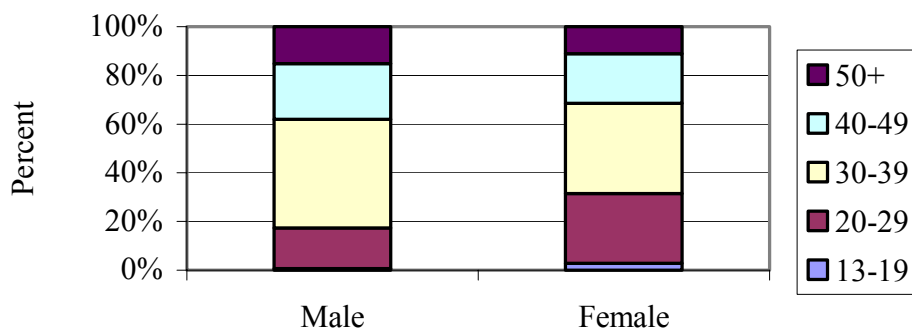
Racially, blacks accounted for the greatest number of reports of HIV due to heterosexual activity. In 1997 and 1999, black females accounted for over 50% of reports of heterosexually-acquired HIV. Although white males were least likely to become infected through heterosexual activity, their relative proportion of new HIV cases transmitted this way has increased from 3% in 1996 to 7% in 1998 (Figure 14). Among Hispanics and persons of other races, heterosexual activity has been associated with 1% to 4% of reports of HIV between 1996 and 2000.

Figure 13. Trend in Reports of Heterosexual HIV Reports (1996-2000)



When HIV reports associated with heterosexual activity are examined by age, interesting trends can be observed. Females infected through sex with an HIV-infected male tend to be younger than males infected through sex with an HIV-positive female (Figure 15). In 2000, just over 30% of females infected through heterosexual activity were less than 30 years of age. In contrast, 45% of males reported with HIV due to heterosexual behavior were between 30 and 39 years of age.

Figure 14. Age Distribution of Heterosexual HIV Reports by Gender (2000)



Among teens, heterosexual activity accounted for 22% of cumulative AIDS reports and 33% of cumulative HIV reports. Some of this is due to the fact that females, the most likely to report heterosexual behavior, make up 40% of reports of AIDS in teens and more than 50% of teen reports of HIV. This may not be a true representation of the gender distribution of HIV infection in teens, though, since females are more likely to receive medical care/family planning and therefore to receive testing for HIV.

Overall, heterosexuals make up 25% of all persons living with HIV/AIDS, but among 3,367 females living with HIV/AIDS, heterosexual activity as a transmission mode was reported for nearly half (48%).

Well over half of persons living with HIV/AIDS acquired through heterosexual activity were reported from the Eastern and Central Regions (Table 25). Prevalence rates in these two regions are similar – 55.2 per 100,000 in Eastern and 50.9 per 100,000 in Central. Rates are much lower in other areas of the state, ranging from 14.9 in Northwest to 18.2 in Southwest, and 28.8 in the Northern Region.

Table 25. Heterosexual-Associated Disease – Heterosexuals Living With HIV or AIDS

	Northern	Eastern	Central	Northwest	Southwest	Total
Number	522	948	620	152	238	2,480
Rate/100,000	28.8	55.2	50.9	14.9	18.2	35.0
Ratio	1 per 3,477	1 per 1,812	1 per 1,965	1 per 6,708	1 per 5,495	1 per 2,854

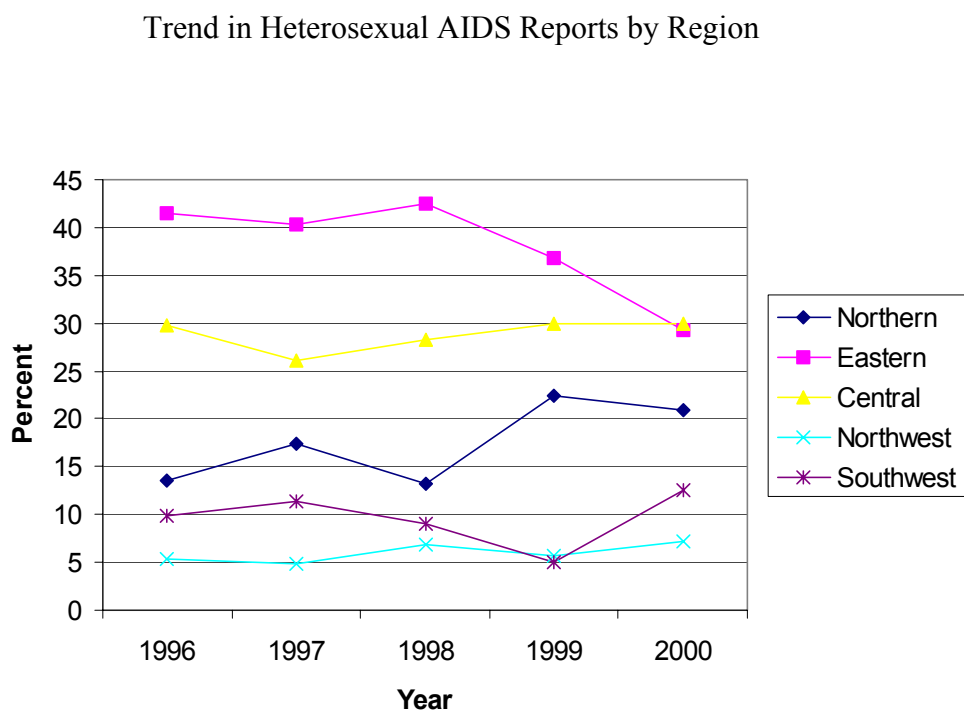
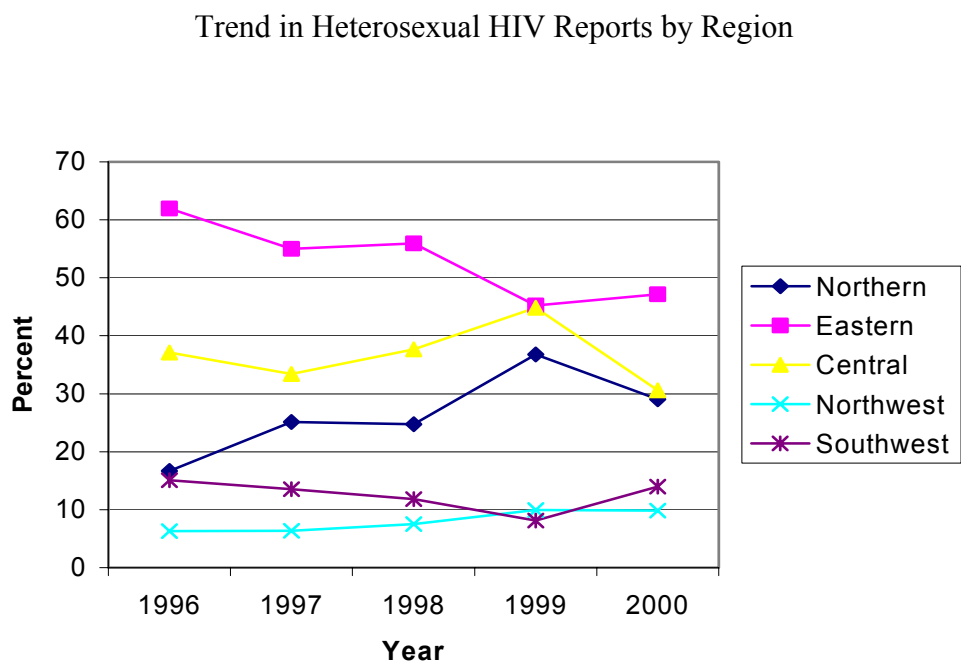
Since 1996, the Eastern Region has consistently accounted for the most reports of heterosexual activity in Virginia for HIV and AIDS (Table 26). In 2000, 47% of reports were received from health districts in the Eastern Region. As with other modes, the Central Region was reported the second most frequently for the majority of years.

Table 26. Reports of Heterosexual HIV/AIDS by Region

	Northern	Eastern	Central	Northwest	Southwest	Total
	Number and (Percentage)					
1996	53 (16.7)	197 (61.9)	118 (37.1)	20 (6.3)	48 (15.1)	318
1997	91 (25.1)	199 (55.0)	121 (33.4)	23 (6.4)	49 (13.5)	362
1998	69 (24.7)	156 (55.9)	105 (37.6)	21 (7.5)	33 (11.8)	279
1999	100 (36.8)	123 (45.2)	122 (44.9)	27 (9.9)	22 (8.1)	272
2000	77 (29.1)	125 (47.2)	81(30.6)	26 (9.8)	37 (14.0)	265
Total	390 (26.1)	800 (53.5)	547 (36.6)	117 (7.8)	189 (12.6)	1,496

The pattern is the same for reports of HIV infection, but when five-year trends are examined, it appears that the proportion of reports for heterosexual activity is increasing from the Northern Region while decreasing from the Eastern Region of the state (Figure 16). For AIDS, the proportion in Eastern Virginia has been decreasing since 1998 while an increase can be seen in Northern Virginia between 1998 to 2000.

Figure 15. Trends in Heterosexual HIV/AIDS Reports by Region (1996-2000)



Key Points

- The proportion of new cases reportedly transmitted by heterosexual activity increased substantially from 1989 to 2000, from 4% to 18% of AIDS cases and from 14% to 22% of HIV cases.
- Overall, heterosexual transmission seems to be proportionately increasing in the Northern Region, while it is decreasing in the Eastern Region.
- Heterosexual activity with an HIV-positive male was the most frequently reported cause of infection among females during 1989-2000 – more than half of all new cases among females were attributed to this risk.
- Females are at much greater risk than males for infection through heterosexual activity, and this is of particular concern for teenage and young adult women (20-29).

Women

Although the number and distribution of females in the Virginia general population are roughly the same as for males, patterns of HIV/AIDS vary a great deal by gender.¹ Women are much less likely than men to be HIV-positive and remain less likely to contract HIV infection. However, the proportion of AIDS and HIV reports in females has been increasing each year. In 1996, females accounted for 17.7% of all AIDS reports and 29.1% of all HIV reports. In 2000, 24.5% of reported AIDS cases and 31.2% of reported HIV cases were among women.

As of December 31, 2000, an estimated 2,227 females with HIV and 1,140 females with AIDS were living in Virginia. Women made up 29% of persons with HIV and 20% of those with AIDS. The rate of AIDS for adult/adolescent females in Virginia is 7.5 per 100,000 females, less than the national rate of 9.0 females with AIDS for every 100,000 females. The rate for HIV infection is greater, with Virginia reporting a rate of 8.5 females with HIV per 100,000 females in the population. (No comparable rate is available for the United States as a whole).

During 2000, gender-based differences are also influenced by race/ethnicity in Virginia. Among whites, males are 4.6 times as likely as females to have HIV and 7.8 times as likely to have

¹ Gender-based differences in case reports are discussed in Section 3, p. 23-26, and are summarized but not repeated here.

AIDS. Hispanic males are 3.8 times as likely as females to have AIDS. The pattern is very different for blacks, however – black males are slightly more than twice as likely as black females to have AIDS and almost twice as likely to have HIV.

Special needs of African American women. Clearly, African American women are at especially high risk for becoming HIV-infected, and in Virginia, they constitute 70% of all women with AIDS and 10% of the total number of persons living with AIDS. The two principal modes through which they become infected are injecting drug use and heterosexual contact with HIV-positive men. Traditional expectations that women will assume subordinate and caregiver roles make it difficult for them to negotiate safer sex practices with their partners.⁵ Thus, it is critically important that HIV prevention interventions are culturally and gender relevant.

An exploratory study conducted in 1995-96 for VDH and the HCPC by SERL and the Hampton Roads Urban League tested the potential effectiveness of intensive street outreach to support black women who wished to adopt HIV risk reduction behaviors.⁶ The Stages of Change Model was used as a framework for the interventions and for a process evaluation of their implementation. Results were encouraging – 39% of HIV-tested intervention group women moved to safer behaviors. Women were more likely than men to move to safer behavior levels, and HIV-tested women were about 50% more likely to adopt safer behaviors than were non-HIV tested women.

Financial and social dependence upon males, exchanging sex for drugs, the decline of the economic status of the African American community, and the increase of syphilis and gonorrhea have also increased the likelihood that black women will become infected. HIV prevention needs to focus on women's interpersonal relationships and skill building to negotiate safer sex practices. This is different from women's traditional roles and may make changing the behavior more difficult. It is critical that these approaches be initiated during early adolescence, as many young women become sexually active at this stage of development.

Although the numbers of HIV-positive women from other race/ethnicities remains much smaller than for white and black women, there is an increasing need for prevention interventions with these groups, as well. Women's roles and expectations for sexual behavior are culturally defined,

and for each group, specific attention must be paid to developing interventions that are sensitive and effective. In a 1998 study conducted in Georgia, Latinas participated in a focus group to discuss what they knew about HIV/AIDS and how they were protecting themselves.⁷ Women did not even want to attend the group unless there could be a parallel meeting of some kind for their male partners. The sponsoring organization arranged to have a social experience with food for the men, while their female partners participated in the focus group without them.

Key Points

- Although women are less likely to be HIV-infected than men, rates of infection are increasing among females, relative to males.
- There are racial differences in the patterns of gender-based infection rates: black women become infected at rates much closer to those of black men, compared with the relative proportion of white women to white men.
- Women face special challenges in adopting HIV risk reduction behaviors and may fear being overwhelmed by resistance from male partners.
- Prevention interventions can work for women, if they are culturally congruent and provided in safe, trusted venues.

A **Adult Substance Abusers and their Partners**

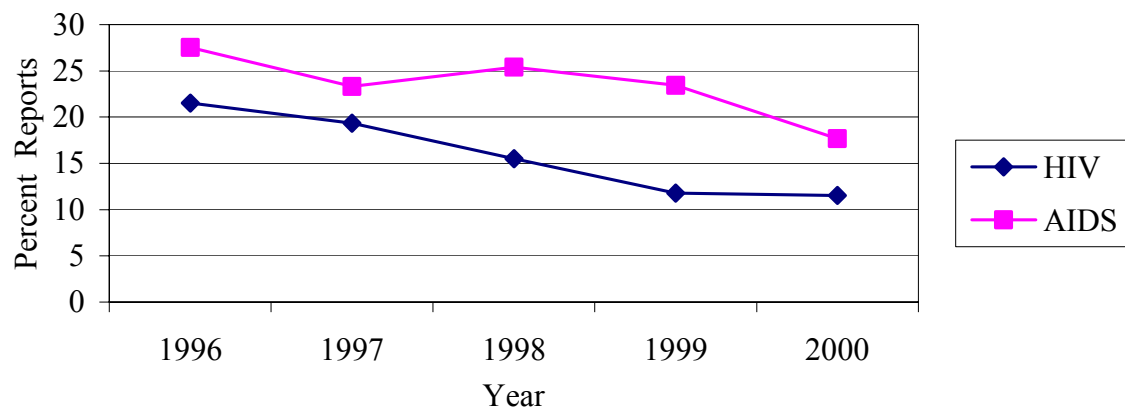
Nationally representative data from 12,381 U.S. adults interviewed for the 1996 National Household Survey on Drug Abuse (NHSDA) indicate that 2.8% of the non-institutionalized general population (an estimated 3.9 million adults) have increased risk for HIV through sexual behavior.⁸ Nearly two in every 100 adults (1.7%) reported some degree of risk through drug-related behaviors (representing 1.2 million persons), and 3.5% (5 million persons) reported some degree of risk due to sexual and/or drug related behavior. National data collected in 1996 by the National Institute on Drug Abuse indicated that 7.5% of crack smokers were HIV-infected.⁹

Although state level samples are too small to provide other than rough estimates, extrapolation of these percentages to Virginia indicate approximately 83,375 adults with drug-related HIV risk.

Injecting drug users

Injecting drug use (includes IDU and MSM/IDU) was the third most frequently reported risk factor for both AIDS and HIV during the past five years. Among total reports, IDU has accounted for 22% of all male AIDS cases, 29% of all female AIDS cases, and 24% of HIV reports in both males and females. IDU as a risk is decreasing in number of and proportion of HIV reports. However, the proportion of IDUs among all reported AIDS cases increased from 1997 to 1998, as seen in Figure 17.

Figure 16. Five-Year Trend in IDU-Associated Reports of HIV/AIDS



Blacks account for 74% of all cumulative IDU reports of HIV/AIDS in males and 76% in black females. White males make up 22% of cumulative IDU HIV/AIDS reports and females make up 21% of cumulative reports. Hispanics, both male and female, make up 3% of IDU-associated reports. This distribution remained basically the same in 2000, when black males accounted for 74% of IDU-HIV/AIDS reports in males and black females accounted for 82% in females. White males and females were reported in 22% and 17% of HIV/AIDS reports, respectively, in 2000, and Hispanics in 3% and 0%, respectively.

When reports of HIV and AIDS among persons reporting injecting drug use are examined by age, persons in their 30s account for the most cumulative reports with a risk of IDU and IDU/MSM (Table 27). However, in 2000, persons between the age of 40 and 49 were reported

more frequently (with AIDS) than those younger. IDU and IDU/MSM has been identified only rarely in persons less than 20 years of age.

Table 27. Distribution of IDU and IDU/MSM Reports by Age

	HIV		AIDS	
	Number and (Percentage)			
	Cumulative	2000	Cumulative	2000
13-19	30 (1.0)	0 (0.0)	3 (0.1)	1 (0.6)
20-29	649 (21.1)	13 (14.1)	347 (11.5)	8 (5.0)
30-39	1471 (47.9)	37 (40.2)	1437 (47.5)	64 (40.0)
40-49	786 (25.6)	31 (33.7)	1036 (34.2)	66 (41.3)
50+	136 (4.4)	11 (12.0)	202 (6.7)	21 (13.1)
Total	3072 (100)	92 (100)	3025 (100)	160 (100)

As of December 31, 2000, a total of 2,827 persons had been reported with HIV/AIDS and a risk factor of IDU or MSM/IDU living in Virginia. Almost 75% were males (2,113/2,827) and they accounted for 21% of all males living with HIV/AIDS. Females whose transmission risk was IDU accounted for 21% of all females living with HIV/AIDS. The prevalence rate for IDUs living with HIV/AIDS is 39.9 per 100,000 population statewide.

The majority of cumulative reports of IDUs with AIDS have been received from the Central and Eastern Regions of Virginia (both 32%). During the last five years, the Eastern Region was the most frequently reported. The Northern Region has accounted for 20% of all IDU-related AIDS reports. The Southwest and Northwest have reported IDU related cases far less frequently.

Table 28. IDUs and MSM/IDUs Living With HIV or AIDS

	Region					
	Northern	Eastern	Central	Northwest	Southwest	Total
Living with HIV/AIDS	649	888	865	201	224	2,827
Rate/100,000 Population	35.8	51.7	71.0	19.7	17.1	39.9
Ratio	1 per 2,797	1 per 1,934	1 per 1,408	1 per 5,072	1 per 5,838	1 per 2,504

The majority of HIV/IDU-related cumulative reports have also been from the Eastern and Central Regions. In 2000, though, the Northern Region was the source for 34% of all HIV-IDU reports received. The Central and Eastern Regions reported 24% and 28% respectively in 2000. The number from the Central Region has been steadily decreasing since 1995. IDU-HIV risks decreased in the Eastern, Central, and Northwest Regions between 1995 and 2000.

More persons living with HIV/AIDS at the end of 2000 and infected through injecting drug use were reported from the Eastern Region than other regions of the state (as seen in Table 28). But when the numbers are compared to the populations of the area it is seen that the prevalence rate for IDUs living with disease is highest in the Central Region (71.0 persons living with HIV/AIDS per 100,000 population or one in every 1,408 persons in the region). The Eastern Region has the second highest rate at 51.7 per 100,000 followed by the Northern Region at 35.8 per 100,000.

Prevention Challenges. National data from the NHSDA are useful in understanding how patterns of drug use and sexual behavior are inter-related with each other to effect HIV risk.⁸ The high rate of sexual risk behavior in this group suggests that ideally condom use will be addressed in all prevention and intervention strategies. Much of the empirical research regarding substance abuse and HIV have focused on injecting drug users and their partners, yielding results that can help develop effective prevention methods for these individuals. High risk sexual behaviors such as multiple partners, not using condoms and usage of drugs during sex, and having partners who

self-inject and share needles have been found to be prevalent among non-injecting drug users, including alcohol abusers.¹⁰⁻¹² Results from these and other studies suggest that HIV prevention and education in substance abuse treatment help lower drug use, but changing sexual behavior is more difficult.¹³

The need to integrate HIV prevention in substance abuse treatment has been well documented through published studies, and the use of peers with individuals who are out of treatment has also been shown to be effective.¹⁴⁻¹⁵ In a 1997 study that compared results of individuals who received an HIV educational component to their treatment with those who received a behavioral skills training component, both approaches resulted in reduced rates of HIV risk-related sexual behaviors.¹⁰ However, participants who received the educational component failed to maintain improvement at follow-up.

Despite challenges, substantial HIV risk reductions can occur after an individual begins treatment, if effective prevention programs are available.¹⁶ The National Institute on Drug Abuse (NIDA) suggests three main components to prevention for substance abuse populations, including outreach to active users, recruitment and referral to treatment and risk behavior reduction.⁹ Based on findings from NIDA funded research, interventions should occur in a variety of settings and provide a means for individuals to change their behaviors.

Key Points

- Black males and females are at the highest risk for HIV infection through injecting drug use.
- Persons infected through this behavior tend to be older than others reporting HIV infection and are found most often in the Central and Eastern Regions of Virginia.
- Teenagers are the least likely to become infected through IDU. Persons 30 to 49 years of age are the most frequently reported among this behavior group.

Children and Youth

Perinatally-Acquired Infections

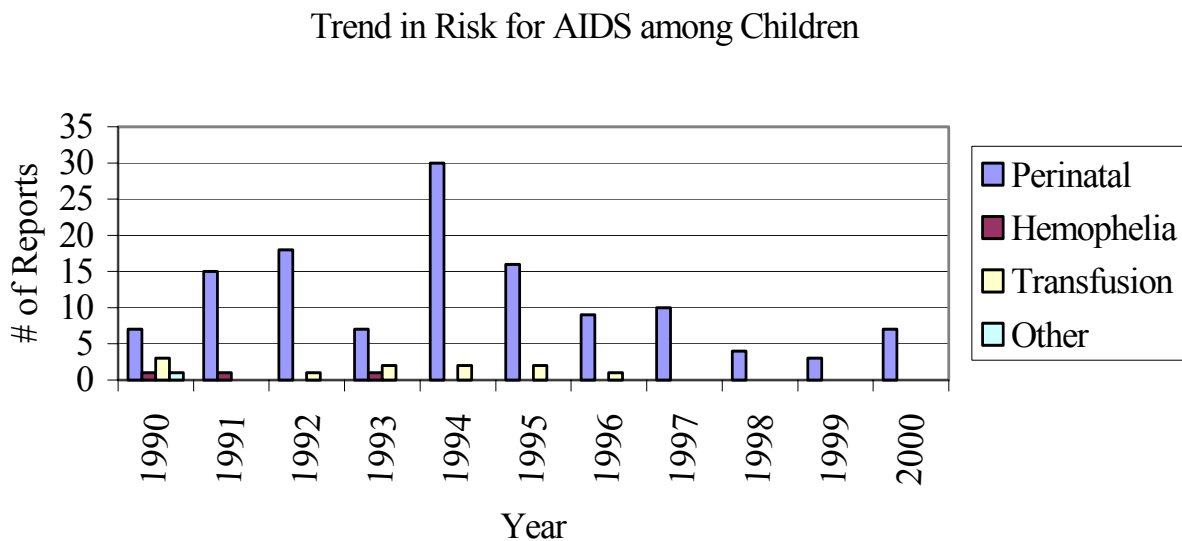
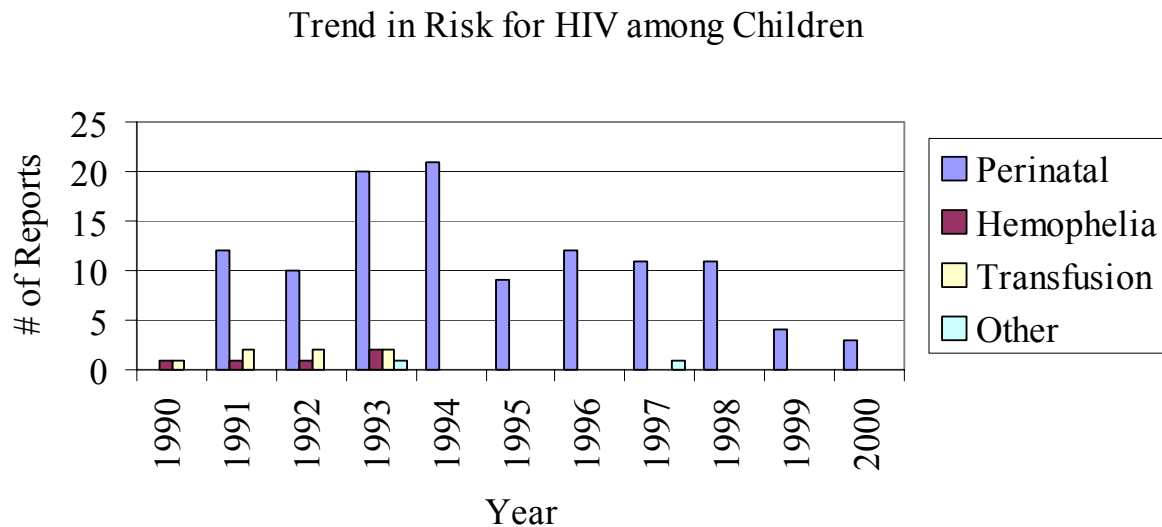
Perinatal exposure refers to a child born to an HIV-infected mother. A total of 143 reports of AIDS and 113 reports of HIV infection have been made among Virginians younger than 13 with perinatal exposure, since reporting was initiated (Table 29). Nearly half of all these cases were reported from Eastern Virginia, which reported more than twice as frequently as Central, the region with the second highest number of perinatal HIV/AIDS reports. Between 1998 and 2000, four perinatal cases of HIV infection were reported from Southwest, one from Northwest, six from Eastern and seven from Central Region.

Table 29. Cumulative Cases of Perinatally-Acquired HIV/AIDS

	Total	Northern	Eastern	Central	Northwest	Southwest
		Number and (percentage) of all cases				
AIDS	143 (100)	22 (15)	67 (47)	31 (22)	6 (4)	17 (12)
HIV Infection	113 (100)	15 (13)	48 (42)	26 (23)	6 (5)	18 (16)
Total	256 (100)	37 (14)	115 (45)	57 (22)	12 (5)	35 (14)

Since 1994, reports of AIDS and HIV have decreased in children younger than 13. This is likely due to the treatments available to retard the onset of AIDS, the availability of testing and subsequent use of zidovudine in pregnant females to prevent transmission of the HIV virus from infected females to their newborns. Perinatal transmission of HIV is the most common cause of HIV/AIDS in children less than 13 years of age reported to VDH and the only cause of HIV infections reported since 1994 (except for one case for which risk is undetermined) as can be seen graphically in Figure 18. Cases with a risk of transfusion or the use of products to treat hemophilia have greatly decreased since the onset of blood screening in 1985 and there have been no reported cases since 1996.

Figure 17. Trends in Risks for HIV/AIDS among Children (1990-2000)



Slightly more than half of those reported with perinatal HIV infection are females (54%). To date, a large majority of perinatal reports have been among blacks (74%), almost four times as many as in

whites (19%), and 12 times as many as in Hispanics (6%). Less than 1% of perinatal reports have been among persons from other race/ethnicities.

Sixty-two percent of children reported with perinatal AIDS (88 of 143 reported) and 89% of children reported with perinatal HIV infection (101/113) were alive at the end of 2000. Children living with perinatally-acquired AIDS and HIV at the end of 2000 ranged in age from infant to 19 years of age.

Key Points

- Perinatal infection is the predominant cause of HIV infection in children less than 13 years of age but these infections have decreased since the recommendations for AZT treatment of pregnant women were introduced in 1994 (MMWR 1994;43 (No. RR-11).
- More cases of perinatal HIV/AIDS have been reported from Eastern Virginia than other regions of the state, with the Central Region reporting the second highest number of cases.
- The annual number of perinatal reports for both AIDS and HIV infection has decreased since 1994.
- Perinatal transmission has been the only mode of transmission reported in pediatric cases of HIV infection since 1994.
- Perinatal transmission cases are most likely to be black.

Adolescents

The number of reports in teens has fluctuated with no clear trend, and among teenage males, MSM-related behavior is the most frequent risk behavior for HIV/AIDS, accounting for 58% of all reports (1998-2000). Heterosexual activity accounted for 22% of cumulative AIDS reports and 33% of HIV reports. Among Virginians 13-19 years of age, the 2000 incidence rate was 4.1 per 100,000 for HIV and 0.4 per 100,000 for AIDS. At the end of 2000, it was estimated that 0.6% of Virginians age 13-19 (378 individuals) were living with HIV/AIDS. New cases have been rare among children and youth. But, in 2000, the incidence rate of new HIV cases 13-19 was 10 times the rate of new AIDS cases. This difference was more dramatic than for other age

groups and may signal an increase in the proportion of Virginia youth who are becoming infected.

Prevention Challenges. Youth who are 13-19 years of age constitute a population of special concern for HIV/AIDS prevention. Although their overall rate of HIV infection is low relative to that of adults, adolescents encounter social and peer pressures that may put them at special risk, and when educational and prevention resources are unavailable, many youth may be particularly vulnerable to becoming HIV-infected.

Data collected in 1999 by the national school-based Youth Risk Behavior Surveillance System (YRBSS) provide estimates of substance use and sexual behaviors that can increase risk of HIV infection. These data are gathered through a national probability sampling method and yield reliable estimates for whites, blacks, and Hispanics.² Significantly increasing national trends during 1991-1999 were documented for lifetime marijuana use, marijuana use before age 13, current cocaine use, condom use, and receiving HIV prevention education in school. Although Virginia has not participated in YRBSS since 1993 and state-level data are unavailable, national data created by combining weighted samples from other states can be useful to understand probable trends in the Commonwealth.

Half of all YRBSS respondents (50%) reported current alcohol use in 1999, ranging from 40% of blacks to 52.5% of whites and 52.8% of Hispanics. Four percent reported current cocaine use, and 10% reported having used cocaine at least once. In 1999, 36% of YRBSS respondents across the United States were currently sexually active – 33% of whites, 36.3% of Hispanics, and 53% of blacks. Substantial proportions reported four or more sexual partners – 12.4% of whites, 16.6% of Hispanics, and 34.3% of blacks. One in four (25%) said they had used alcohol or another drug during their most recent sexual intercourse, and 58% reported condom use during this experience.

Clearly, many youth are at considerable risk of becoming HIV-infected due to related sexual and substance use behaviors, making it very important that prevention interventions be available.

² Samples are too small to create estimates for other race/ethnicities.

Nearly three in 10 students (28%) who participated in the 1999 surveys reported feeling sad or hopeless, and 19% had seriously considered suicide. These percentages were higher for females and showed a clear racial effect – 15% of blacks, 17% of whites, and 20% of Hispanics had seriously considered suicide. Feelings of low self-worth are often associated with risk-taking behaviors, and these high rates of suicidal feelings are additional factors that can predispose youth to HIV risk-related behaviors, increasing their likelihood of becoming infected.

In states that participate in YRBSS, it is encouraging to observe a significant and steady increase in the proportion of students who have received school-based HIV prevention education. In Virginia, where school-based HIV prevention and sex education programs are restricted, it will be critical for community and faith-based interventions to be offered.

Incarcerated Persons/Inmates

The Bureau of Justice Statistics estimated that in June of 2000, Virginia had 29,890 persons incarcerated with an incarceration rate of 420 per 1000,000 residents. This includes both jail and prison populations. It was also estimated that in 1999, 330 inmates in Virginia were known to be HIV positive, which accounts for 1.3% of the incarcerated population.

On a national level, 2.3% (24,607) of State prison inmates, less than 1% (1,150) of Federal prison inmates and 1.7% (8,615) of local jail inmates were known to be HIV positive.

Nationally, the rate of AIDS-related deaths among inmates has decreased significantly since 1995, from a rate of 100 per 100,000 inmates to a rate of 20 per 100,000 inmates in 1999.

Prevention Challenges. The high HIV prevalence among incarcerated persons suggests the need for effective HIV prevention interventions. However, several issues arise when developing programs for inmates. These include the role that prisons play in HIV testing and treatment of inmates, various institutional and access barriers, diversity of programs from one institution to the next and overcrowding.¹⁹⁻²¹ The current trend is for prisons to provide mandatory HIV testing, segregation of HIV infected individuals, promotion of condom use, the use of peer

educators and providing risk-reduction counseling.²²⁻²⁵ Education and risk reduction were found to be the least controversial methods of HIV prevention in prisons, but their effectiveness is still undetermined.²⁶ There is a need for more extensive STD and HIV prevention interventions that involve integrating various treatments and services offered within the justice system.^{22,26}

Persons Living with HIV/AIDS

A profile of PLWHA is provided in Table 4, p. 14, where characteristics of these individuals are discussed in some detail. HIV-infected Virginians live in all areas of the state and represent all ages and population groups. An estimated 81 of every 100,000 Virginians have AIDS, and 109 of every 100,000 are estimated to have HIV (not AIDS). Virginians living with HIV/AIDS are disproportionately male and increasingly people of color. Substantial differences are based on race/ethnicity, gender, and geographic regions.

These differences mean that the face of AIDS can differ considerably based on where Virginians live and with whom they associate. For example, approximately 4,678 persons are living with HIV/AIDS in Eastern Virginia, where they are approximately .27% of the total population. Less than 1,000 PLWHAs live in Northwest Virginia – only .08% of that region’s population. Typically, HIV service systems are less developed in low prevalence areas, and PLWHA in Southwest Virginia and other areas where HIV/AIDS rates are relatively low can expect to have considerably more difficulty finding appropriate and comprehensive services. Prevention interventions may likewise be limited.

Differential access to care services and prevention programming may be further exacerbated by cultural characteristics that not all providers and educators fully understand. For example, HIV-infected women face very difficult challenges related to their general health as well as to such personal matters as childbearing. Many women with AIDS are unable to find critical support services such as child care and transportation to work or to health care appointments. These issues are especially difficult for women who live in rural areas.

Many persons living with HIV/AIDS find themselves cut off from family and other social supports, often including rejection from communities of faith. These problems can be even more pronounced for African Americans and other persons of color, among whom rates of infection

continue to increase. Black communities seem less willing to discuss same-sex orientation and behavior, and the belief of many people that homosexuality is immoral makes it difficult, if not impossible, for many churches and mosques to accept their HIV-infected members. At a time of greatest need, African Americans with HIV/AIDS may lose the supports they count on. Community-based HIV services and prevention programs are even less available for Latinos and other minority groups.

PLWHA are more likely than other Virginians to be struggling with substance abuse, and for some, their difficulties are complicated by mental illness or mental retardation. These complications make HIV prevention even more difficult, and relatively few programs have been successfully implemented without extensive resources. In order to meet the HIV prevention education needs of these special populations, additional resources and effort will be needed across all regions of Virginia. Perhaps most troubling, the apparent increasing rates of infection in youth, coupled with evidence that rates of co-factors are also increasing, challenges service providers and prevention programs to develop effective interventions for young people at a time in their lives when it is hard for them to recognize a need.

Key Points

- Virginians living with HIV/AIDS can be found in all areas of the state, all age groups, and all race/ethnicities. For PLWHA who have other very challenging health conditions such as substance abuse and mental illness, accessibility of coordinated care may be very limited.
- Many PLWHA have personal characteristics and social situations that challenge the ability of contractors to provide successful prevention education and interventions.
- Although the overall rates of reported new HIV and AIDS cases are decreasing, the mix of infected individuals is increasingly diverse, resulting in a growing demand for culturally congruent services and programs.
- Systemic changes in HIV/AIDS care and prevention will be needed in order to respond effectively to the needs of the changing face of the epidemic as it continues to unfold across the Commonwealth.

❑ Section 5.

Populations of Special Interest

The Virginia HCPC has identified four additional populations of special interest, to which attention will be given in the next two years – homeless persons, persons with mental illness or mental retardation, sex workers, and transgendered persons. Since empirical data are limited for these groups, much of this section refers to published literature to provide a conceptual framework for the prevention challenges that will have to be faced as an intervention plan is developed. Data on additional factors related to HIV/AIDS transmission are included in this section, to provide basic information about sexually transmitted diseases and teen pregnancy.

Homeless Persons

Homeless individuals are at increased risk for HIV infection due to increased incidence of substance abuse, mental illness, and high-risk sexual behaviors including exchanging sex for money/drugs. In addition, persons living with HIV/AIDS may be at increased risk of becoming homeless because of job loss caused by illness and fatigue. An estimated one-third to one-half of the persons with AIDS are either homeless or in imminent danger of becoming homeless, and approximately 15 percent of homeless Americans are infected with HIV.²⁷⁻²⁸

In a news brief released on December 19, 1999, the HIV seroprevalence rate of homeless adults was estimated at 3.4%, compared to 1% for the general public. Even higher seroprevalence rates have been reported among homeless adults with severe mental illness – 8.5% in San Francisco and 19.4% in New York City.²⁹ Another population that is of great concern are homeless adolescents. This group is considered to be at an even greater risk for HIV as they may exchange sex for food and shelter³⁰.

A large-scale study conducted by AIDS Housing of Washington (AHW) reveals the housing difficulties faced by persons with HIV/AIDS. Since 1995, over 10,000 surveys related to housing needs of persons with HIV/AIDS have been collected from respondents in fifteen counties or MSAs (including the Washington, DC MSA) and eight states (including Virginia).

In this sample, 41% of respondents had been homeless at least once and 9% were homeless at the time they were interviewed. Since discovering that they were HIV+, over a third had slept in a shelter and almost a third had slept outside or in a car. Twenty percent had traded sex for shelter. Almost half reported sleeping at a friend's house or apartment. Housing was often unstable for these respondents, as almost 40% had moved three or more times in the previous three years. Twenty-two percent were on waiting lists for housing assistance at the time they completed the survey (AIDS Housing Survey).

In 1998, the Central Virginia HIV Care Consortium collaborated with Housing Opportunities for Persons with AIDS (HOPWA) in Richmond to assess the various service needs of individuals with HIV/AIDS in Metropolitan Richmond and the surrounding areas of Central Virginia. Surveys were conducted with HIV-positive clients and with non-clients contacted on the street in venues frequented by persons with unstable housing.³¹ Four percent of HIV clients were homeless or living in emergency shelters at the time of the study – 2% of RWCA Title II clients, and 12% of non-Title II clients. Thirty percent of respondents contacted in street venues reported being homeless or sheltered when interviewed. Unstable housing was most often reported to result from substance abuse, financial problems, or other medical and health conditions.

Similar results were found in a more recent survey of contractors funded through VDH to provide prevention programs and Ryan White Title II care services.³² Sixty-one percent of 69 responding organizations reported services to homeless persons – 31% targeted these individuals for prevention programs, and 45% targeted them for care. The HIV prevention needs of this group were considered to be less than minimally met, and statewide, homeless persons were among the top three populations most in need of prevention programs.

Prevention Challenges. HIV prevention research is needed to obtain better characterization of the homeless population, and to identify their high risk practices and service barriers. Current literature identifies several barriers to HIV prevention efforts, including lack of resources to provide risk reduction programs through shelters, clinics and food kitchens; lack of transportation to services including testing; lack of routine screening; mental illness; drug abuse; and the practice of exchanging sex for money/drugs.³³

Empirical studies conducted during the past five years have shown that to be effective, prevention interventions must address age and gender differences.³⁴⁻³⁷ For example, the HIV risk circumstances of males differ from those of females – in these studies, men consistently reported more sex partners, negative attitudes toward condom use, higher perceived HIV risk, and lower perceived self-efficacy. Women reported greater life dissatisfaction, as well as more alcohol and drug use than males. Other studies have shown that the state of being homeless and length of time of homelessness are the conditions most associated with HIV risk behaviors. Associated with the condition of being homeless, community stigma was identified as a barrier to receiving services that address conditions leading to homelessness and HIV risk behaviors.

Key Points

- HIV seroprevalence among homeless adults may be 3-20 times as high as among the general population.
- Preliminary studies indicate that homelessness is associated with substance abuse, other medical and health conditions, and financial stress.
- Effective HIV prevention programs for the homeless have been identified as a top priority by Virginia prevention and care contractors.

Persons with Mental Illness or Mental Retardation

In 1996, over 200,000 Virginians were estimated to have mental illness or to be mentally retarded³⁸, representing approximately 3% of the total population. Over 92% of these individuals (185,000) were receiving treatment in the public sector, and another 10,000 were on waiting lists for publicly-funded services. No data are available on the HIV seroprevalence rates among Virginia's mentally ill and mentally retarded citizens.

Mental illness is treated in a variety of inpatient, outpatient and community based settings, making it nearly impossible to capture comprehensive or even reasonably comparable and complete data. Yet, HIV prevention research conducted with persons with psychiatric illness has

shown that this population is at high risk for HIV infection due to incidence of intravenous drug use and non-protected high risk sexual behavior. In a 1996 study, only a portion of individuals (15-50%) with psychiatric illness knew of their HIV serological status.³⁹ Data about HIV status and related behaviors among mentally retarded individuals are even less available.

Prevention Challenges. Studies evaluating the effectiveness of HIV prevention interventions with people with mental illness and mental retardation indicate that education and skills-focused interventions can be slightly to moderately effective in reducing risk behaviors among these groups.⁴⁰⁻⁴³ In a 1997 study, participants had a modest decrease in high risk behavior after attending a group intervention based on the Information-Motivation-Behavior Skills Model.⁴⁴ A primary issue surrounding HIV prevention programs for persons with mental illness and mental retardation is that behavior change is hard to sustain and learn.⁴³ However, from available research, it seems clear that mental health programs (inpatient, outpatient and community based) are considered prime outlets for delivering educational and risk reduction methods to these hard to reach groups.

Key Points

- A substantial proportion of Virginians (approximately 3%) are estimated to have mental illness or mental retardation .
- Findings from several preliminary efforts indicate that prevention interventions may be slightly to moderately effective in reducing HIV risk behaviors.
- Outpatient service settings offer a variety of opportunities for conducting HIV prevention efforts to these population groups.

Sex Workers

Because sex work is an illegal activity in the United States and associated with poverty, homelessness, and injecting drug use, determining the actual number of sex workers in a given area is very difficult. Published data on HIV prevalence among sex workers are limited and outdated, and most reported studies have been conducted in other countries, including Pakistan,

India, Malawi, Thailand, and Indonesia. Nevertheless, two published studies give some indication of prevalence in United States sex workers. Among 1,396 female sex workers in six U.S. cities, the 1987 HIV seroprevalence rate was 12% with a range from 0-47.5% depending on the city and incidence of intravenous drug use. Nearly a third (29%) of 235 male sex workers were found to have HIV in another study conducted in Atlanta, Georgia.⁴⁵

In one of Virginia's earliest HIV surveys, interviews were conducted in 1988 with 95 self-identified male prostitutes and in 1989 with 92 self-identified male prostitutes in the same street venues. These interviews were conducted in Richmond by the SERL in collaboration with the Richmond Street Outreach Project. The majority of individuals who participated in the study were 25 years of age or younger, and about half (46%) were high school graduates (37% had less than a high school education). About half of study participants were white, half were black, and about a third identified as transgender (26% in 1988, 40% in 1989). Eleven percent in 1988 and 18% in 1989 reported injecting drug use. Although virtually all of these individuals knew about HIV testing, only about 40% in both samples reported having been tested. In both samples, over 80% said they knew where to be tested, and equal or higher percentages had received information about AIDS from health clinics they attended. Nevertheless, 44% believed they had little or no chance of getting AIDS, and their reported condom use behavior reflected these attitudes. While approximately 80% reported condom use with receptive and insertive anal sex, fewer than half used condoms for oral sex.

Prevention Challenges. The lack of empirical data regarding sex workers indicates that additional studies are needed to define their characteristics and to monitor HIV/AIDS seroprevalence rates among them. The value of such information can be considerable. For example, a CDC study of community-level HIV intervention in 5 cities reported participants had increased their stage of change scores and increased condom use.⁴⁶ Other effective interventions included: (a) using theory-based role modeling materials, (b) peer support, (c) delivery of HIV prevention materials through syringe exchange programs and (d) female condom distribution.⁴⁷⁻⁴⁹ When studies are successfully implemented with sex workers, it appears that useful data can be gathered to provide guidance in the development of effective HIV prevention interventions.

Key Points

- Sex workers are at great risk of HIV infection and transmission, due to high rates of poverty, homelessness, and injecting drug use.
- Given the unique circumstances of their sexual activity, it may be unusually difficult for them to practice safer sex.
- Existing research findings indicate that sex workers will respond to innovative and culturally competent prevention interventions.

Transgendered Persons

Gender identity involves an individual's self-awareness and expression as a male, female, or other gender and is distinct from the biologic sex assigned at birth. "Transgender" is used to describe a community that consists of transsexuals, cross-dressers (transvestites), and intersexed individuals (hermaphrodites) ⁵⁰. This report will focus on cross-dressers and transsexuals and their special risks for HIV.

Cross-dressers are persons who sometimes dress in clothing that is socially ascribed to members of the opposite sex and whose gender identity is in line with their biologic sex. Transsexuals are persons who were born one sex but live as members of the opposite sex and are often designated as male-to-female (MTF) or female-to-male (FTM). Many transsexuals receive hormone therapy and some undergo surgical procedures to change aspects of their bodies to be inline with characteristics of the opposite sex. It is important to note that gender orientation is distinct from sexual orientation, as a transgendered individual may be physically and emotionally attracted to persons of any gender ⁵⁰.

A study conducted in San Francisco found that thirty-five percent (n=137) of the 392 male-to-female respondents tested positive for HIV. Of those who tested positive, 65% (n=89) were previously aware of their infection. Of the 104 MTF African American respondents, 63% were HIV positive. Having more than 200 sexual partners during a lifetime and the use of injection

drugs were other factors associated with a positive HIV status. The MTF respondents in this study were noted as engaging in high-risk HIV behaviors, including being more likely to engage in receptive anal sex and inconsistent condom use. Eighty percent also reported engaging in sex work or survival sex⁵¹.

Transgendered persons may engage in sex work to pay for the high cost of hormone therapy and sex-reassignment surgery or as a result of employment discrimination and poverty⁵²⁻⁵³. When engaging in sex work, transgendered prostitutes are ascribed the lowest in status among prostitutes. As a result, they often engage in riskier acts to attract customers, including oral or anal sex without condoms or injecting drugs with customers⁵³⁻⁵⁴.

In addition to sex work and high-risk sexual behavior, other risk factors have been identified for this population. Sexual identity conflict may impede the negotiation of safe sexual practices and shame and isolation may result in substance abuse and compulsive sexual behavior⁵². Needle sharing while injecting hormones (often hormones obtained on the street) also exists as a significant risk for this population.⁵²⁻⁵³ In addition, one study found transgendered persons to have the lowest knowledge of HIV/AIDS and had a higher number of sex partners as compared to bisexual males and heterosexual females in their sample⁵⁴.

Prevention challenges.

Brockington study---Focus group participants suggested the following services: greater access to free condoms and lubricants, greater accessibility to HIV testing, clear instructions for safer sex practices, focus on safer sex as opposed to abstinence, and stronger condoms. Specific to transgendered persons, education needs to be targeted toward this population but professionals must recognize and be sensitive to the variety that exists in the transgender community.

Interventions that alleviate isolation and facilitate empowerment in the transgendered community are also needed. Peer education and treating compulsive sexual behavior is also warranted as well as education for professionals related to the special issues of transgendered persons.

Clements-Nolle study—street outreach needed for transgendered sex workers and should include prevention case management to involve education and job training and placement. This may also occur in jails and prisons. Needle exchange outreach for hormonal and non-hormonal drug injection. Education and referral for HIV, substance abuse, and mental health services can be done when transgendered persons approach medical professionals about hormone therapy. For this population, peer counseling and education may be effective.

Nemoto study-- increase knowledge about and practicing of safe sex as well as attending to job skills training and issues of poverty. Sex work, drug injection, and high-risk sexual behavior are reinforced in the bar scene and social networks of transgendered persons, so intervention should also be focused on changing the larger environment. Needles to inject hormones are longer than illicit drug injecting needles and are not often available at needle exchange sites.

Boles study—In studying three groups of transvestite sex workers in Atlanta, they found a much higher seroprevalence rate among the group who exclusively lived with and socialized with other transvestite prostitutes (81% compared to 63% and 13%). In this group crack cocaine use and prostitution were supported. Need to understand and intervene in the behaviors of transgender social networks.

Additional Factors:

Sexually Transmitted Diseases and Teen Pregnancy

The occurrence and patterns of other sexually transmitted health conditions are similar to those of HIV/AIDS, as shown in Table 30, where rates of occurrence are shown for teen pregnancy, gonorrhea, and early syphilis, as well as HIV and AIDS. Referring to this table, it can be seen that in 2000, nearly 4 new cases of syphilis and 144 new cases of gonorrhea were reported for every 100,000 Virginians, compared with 14 new cases of HIV and 15 new cases of AIDS. HIV and AIDS were each more than twice as likely to be reported as syphilis. There were nearly 40 times as many reported cases of gonorrhea as syphilis, and about 10 times as many cases of

gonorrhea as HIV and AIDS. Teen pregnancy occurs far more often than any of these sexually-transmitted diseases. In 2000, nearly 31.5 of every 1,000 teenage Virginia women became pregnant.

Table 30. Rates for Sexually-Related Health Conditions (2000 Rates per 100,000)*

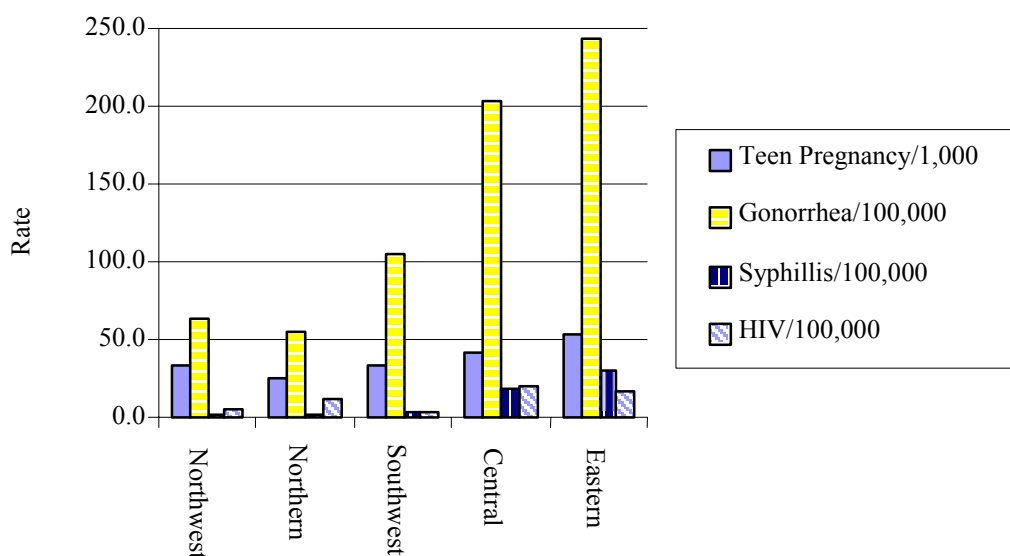
	Teen Pregnancy	Gonorrhea	Syphilis	HIV	AIDS
<i>Statewide</i>	3150	143.6	3.8	13.7	15.4
White	2580	19.1	0.6	3.9	5.6
Black	5370	592.0	15.8	39.7	41.5
Hispanic	3320	35.2	3.9	11.8	13.4
Other/Unknown		233.9	1.2	4.6	4.3
Northern	2050	40.4	1.6	14.7	18.5
Eastern	4250	284.9	5.7	23.3	21.3
Central	3660	234.5	3.4	15.8	19.9
Northwest	2850	44.1	0.3	4.0	5.5
Southwest	2980	94.2	7.3	5.5	7.4

Teen pregnancy rates are based on the population of females aged 10 to 19. All other data are based on total populations (all ages).

Reported rates of these health conditions varied by race/ethnicity and region, as shown in Figure 18. Blacks were far more likely than others to be reported with gonorrhea, syphilis, HIV, and AIDS, and teenage black women were more than twice as likely to become pregnant. Rates of teen pregnancy were fairly consistent across the state, with somewhat higher rates in Eastern and Central Virginia. More pronounced regional differences were found for gonorrhea and syphilis – gonorrhea occurred more than twice as often in Eastern and Central than in Southwest and about four times as often as in Northwest and Northern Virginia, and syphilis patterns were quite similar. The regional patterns of HIV and AIDS reports most closely paralleled those of teen pregnancy.

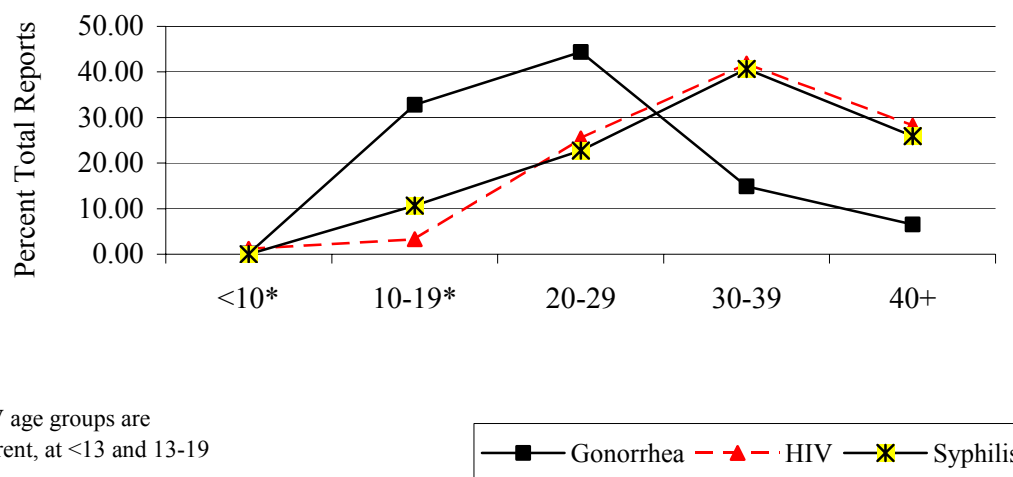
Racial/ethnicity differences in gonorrhea and syphilis reports were consistent across all regions, with the greatest differences in Eastern and Southwest Virginia (not shown). The gonorrhea risk for blacks compared to whites ranged from 16 times greater in the Northwest to 38 times greater in the Southwest region. When blacks were compared to Hispanics, the risks of gonorrhea ranged from six times higher in Northwest Virginia to 30 times in the Central region. When the rate of syphilis in blacks is compared to whites, the risks range from almost 4 times greater in the Northern region to 70 times greater than in whites in the Southwest. Only 13 Hispanics were reported with syphilis in Virginia in 2000. These low numbers makes comparisons difficult.

Figure 18. Sexually-Transmitted Health Conditions by Region



Gonorrhea is reported much more frequently among younger persons, most often among individuals in their 20s (Figure 24). The age distributions among persons reported with HIV infection and syphilis in 1998 are very similar to each other.

Figure 19. Age Distribution of STD Reports



Chlamydia is the most frequently reported sexually-transmitted disease in Virginia (15,366 reports in 2000), but it is not yet possible to generalize the distribution or characteristics of chlamydia to the entire state. While syphilis and gonorrhea depend upon passive reporting from physicians and laboratories across the state, active surveillance efforts for chlamydia take place in specific clinics and only among women. Thus, reports of chlamydia are almost exclusively in females (13,003 out of 15,366 in 2000), and the areas with highest reporting are those in which participating clinics are located. Available data do allow us to conclude that chlamydia is the most prevalent sexually-transmitted disease and a definite problem among females between 15 and 29 years of age, but its true level of frequency in males as well as the distribution of chlamydia across the state are unknown.

Key Points

- Blacks have the highest rates of teen pregnancy, gonorrhea and syphilis infections in Virginia. For gonorrhea and syphilis infections, Hispanics have the next highest rates.

- Rates of teen pregnancy, gonorrhea and syphilis infections are much higher in Eastern Virginia than in other regions of the state.
- The gonorrhea risk for blacks in 2000 ranged from 16 times as great in Northwest Virginia to 38 times as great in the Southwest region. Blacks are from 4-70 times as likely to contract syphilis.
- Nearly 32 of every 1,000 Virginia teenage women become pregnant each year.
- Teenage black women are twice as likely as others to become pregnant.
- Chlamydia is the most frequently reported sexually transmitted disease in Virginia, but due to reporting mechanisms, patterns cannot be determined.

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□ Glossary of Terms

AIDS AIDS is an acronym for Acquired Immunodeficiency Syndrome Disease, a disease caused by infection with the human immunodeficiency virus (HIV).

AZT Drug called **Zidovudine** (formerly **azidothymidine** [abbreviated AZT]), used against human immunodeficiency virus (HIV).

Blood Product Refers to a mode of HIV transmission via a contaminated blood transfusion.

CD4 count The number of "helper" T-lymphocytes in a cubic millimeter of blood. With HIV, the CD4 count decreases as the infection progresses. The CD4 count is frequently used to monitor the extent of immune suppression in persons with HIV.

Chlamydia Chlamydia is a common sexually transmitted disease (STD) caused by *Chlamydia trachomatis*, a bacterium. Chlamydia is known as a "silent" disease because most infected individuals have no symptoms. The few women with symptoms might have an abnormal vaginal discharge, a burning sensation when urinating, lower abdominal pain, low back pain, nausea, fever, pain during intercourse, and bleeding between menstrual periods. In women, the bacteria initially attack the cervix and the urethra (urine canal). If not treated, the infection can spread into the uterus or fallopian tubes and cause an infection called pelvic inflammatory disease (PID). Men with signs or symptoms might have a discharge from the penis and a burning sensation when urinating. Men might also have burning and itching around the opening of the penis or pain and swelling in the testicles, or both. Untreated chlamydia in men typically causes urethral infection. Infection sometimes spreads to the epididymis (a tube that carries sperm from the testis), causing pain, fever, and, potentially, infertility.

Co-Morbidity Term used to describe the coexistence of two or more diseases. For ex. Tuberculosis and HIV.

Cross-dressers Persons who sometimes dress in clothing that is socially ascribed to members of the opposite sex and whose gender identity is in line with their biological sex.

Epidemic The occurrence of more cases of disease than expected in a given area or among a specific group of people over a particular period of time

Epidemiology The study of the distribution and determinants of disease frequency in human populations.

Gonorrhea An infection caused by bacteria called *Neisseria gonorrhoea*, considered primarily a sexually transmitted disease, but can also be transmitted to the newborn during the birthing process. Untreated, gonorrhea can lead to severe pelvic infections in

women, including pelvic inflammatory disease. In men, gonorrhea can cause epididymitis, a painful condition of the testicles that can sometimes lead to infertility if left untreated. Complications in later life can include inflammation of the heart valves, arthritis and eye infections. Gonorrhea can also cause eye infections in babies born of infected mothers. Gonorrhea is also known as Clap.

HCPC Virginia HIV Community Planning Committee

Hemophilia A set of inherited bleeding disorders in which the ability of blood to clot is impaired. Treatment is by blood products that introduce clotting factor and replace lost blood.

Heterosexual Refers to a mode of HIV transmission via having heterosexual contact

HIV Acronym for Human Immunodeficiency Virus, the cause of AIDS (acquired immunodeficiency syndrome). HIV was discovered between 1983-1984 by the French physician Luc Montagnie and his team at the Pasteur Institute. HIV has been called the human lymphotropic virus type III, the lymphadenopathy-associated virus and the lymphadenopathy virus.

HIV/AIDS Reporting System (HARS) National database for the collection of HIV/AIDS data which is forwarded to the CDC

IDU Intravenous drug users; individuals who inject drugs into their veins through the use of syringes

Immunodeficiency The inability of the human body to mount a normal immune response

Incidence The number of NEW cases of a health condition reported within a stated period of time and within a specific population at risk. An incidence rate is the number of new cases of a condition per 100,000 population over the specified time frame.

Information-Motivation-Behavior Skills Model Developed at the University of Connecticut by Dr. Jeffrey Fisher, this HIV behavior model examines the knowledge-based, attitudinal and skill-related factors that contribute to safer behavior.

International Classification of Disease (ICD) A medical coding system recommended for use in all clinical settings and required for reporting diagnoses and diseases to all U.S. Public Health Service and Health Care Financing Administration programs. It is used to standardize disease reporting.

Metropolitan Statistical Areas (MSA) Eight designated areas in Virginia including northern Virginia counties and cities surrounding DC; the Richmond-Petersburg corridor in central Virginia; the Tidewater Region in eastern Virginia; Charlottesville and

surrounding counties and cities in the northwest; and the independent cities of Bristol, Roanoke, Danville and Lynchburg with their surrounding cities in southwest Virginia

Men having sex with Men (MSM) Refers to a mode of HIV transmission via men having sex with men

Morbidity A measure of disease in a population.

Morbidity rate The rate of disease in a population per a specified number [usually per 100,000 population] which allows comparison between populations of different sizes.

Multi-heterosexual Refers to a mode of transmission of HIV via having sexual contact with multiple heterosexual individuals

Pediatric HIV case Term used to describe an individual diagnosed with HIV under the age of 13.

Pelvic inflammatory Disease (PID) PID refers exclusively to ascending infection of the female upper genital tract (the female structures above the cervix). PID is the most common and serious complication of sexually transmitted diseases (STDs), aside from AIDS, among women. The signs and symptoms of PID include fever, foul-smelling vaginal discharge, extreme pain, including pain during intercourse, and vaginal bleeding. PID can scar the fallopian tubes, ovaries, and related structures and lead to ectopic pregnancies, infertility, chronic pelvic pain, and other serious consequences.

Perinatal-Acquired Infection Refers to the passage of HIV infection from an HIV+ mother to the infant during childbirth

PLWHA Persons Living with HIV/AIDS

Prevalence The number and proportion of people with a specific health condition within a specified population at a particular point in time. A prevalence rate is the number of persons out of every 100,000 who have the condition of interest. Reported prevalence does not include unreported cases or people who are unaware of their disease status.

Primary Prevention Prevention targeted before a disease is present and reduces infection risk by eliminating a behavioral risk factor. For example, primary prevention would be the goal of sexual abstinence or avoidance of intravenous drug use.

Protease Inhibitor One of a class of anti-HIV drugs designed to inhibit the enzyme protease and thereby interfere with virus replication. Protease inhibitors prevent proteases from splitting proteins into peptides. Protease inhibitors prevent the cleavage of HIV precursor proteins into active proteins, a process that normally occurs when HIV replicates. Protease inhibitors include saquinavir (brand name: Invirase, Fortovase) and zidovudine (brand name: ZDV) and are used primarily in HIV/AIDS treatment. They are

taken as part of a two- or three-drug cocktail, accompanied by one or more nucleoside antiviral drugs.

Relative Risk (RR) A measure of the magnitude of an association between exposure and disease. The RR indicates the likelihood of developing the disease in the exposed group relative to those in the unexposed group.

Ryan White Care Act (RWCA) Title II The Ryan White CARE (Comprehensive AIDS Resource Emergency) Act is a federal program designed to improve the quality and availability of care for persons with HIV/AIDS and their families. Title II grants are given to states for health care and support services for persons with HIV/AIDS, and include services such as home and community-based health care and support services, pharmacy support through ADAP (AIDS Drug Assistance Program), and medical care and support services.

Secondary Prevention Prevention activities focused on identification of persons who are already infected and on encouraging risk reduction in persons who are infected and who are not yet infected. Secondary prevention efforts also attempt to reduce HIV risk co-factors, such as the presence of sexually transmitted diseases.

SERL Survey and Evaluation Research Laboratory at Virginia Commonwealth University

Serological status Term used to define the infection status of an individual with respect to the presence or absence of microorganism antigens detected in the blood.

Seroprevalence For HIV, seroprevalence is the rate at which a given population tests positive on the ELISA test for HIV antibodies. The seroprevalence rate is nearly the same as the rate of HIV infection in a given population, leaving out mainly those who were recently infected.

Sexually transmitted disease Any disease transmitted by sexual contact; caused by microorganisms that survive on the skin or mucus membranes of the genital area; or transmitted via semen, vaginal secretions, or blood during intercourse. Because the genital areas provide a moist, warm environment that is especially conducive to the proliferation of bacteria, viruses, and yeasts, a great many diseases can be transmitted this way. They include AIDS, chlamydia, genital herpes, genital warts, gonorrhea, syphilis, yeast infections, and some forms of hepatitis. Also known as a morbus venereus or venereal disease.

Stages of Change Model A model designed to describe the stages people go through when changing behaviors. The stages include: precontemplation - when the person has no intention to adopt (and may not even be thinking about adopting) the recommended protective behavior; contemplation - when the person has formed either an immediate or long-term intention to adopt the behavior but has not, as yet, begun to

practice that behavior; preparation - when there is a firm intention to change in the immediate future, accompanied by some attempt to change the behavior; action - when the behavior is being consistently performed but for less than 6 months; and maintenance - the period beginning 6 months after behavior change has occurred and during which the person continues to work to prevent relapse.

Surveillance The systematic collection, analysis, interpretation, and dissemination of health data on an ongoing basis, to gain knowledge of the pattern of disease occurrence and potential in a community, in order to control and prevent disease in the community

Syphilis Syphilis is a complex sexually transmitted disease (STD) caused by the bacterium *Treponema pallidum*. Syphilis is passed from person to person through direct contact with a syphilis sore, called a chancre. Sores occur mainly on the external genitals, vagina, anus, or in the rectum. Sores also can occur on the lips and in the mouth. Transmission of the organism occurs during vaginal, anal, or oral sex. Pregnant women with the disease can pass it to the babies they are carrying. Syphilis cannot be spread by toilet seats, door knobs, swimming pools, hot tubs, bath tubs, shared clothing, or eating utensils.

Transgender A term used to describe a community that consist of transsexuals, cross-dresses (transvestites), and intersexed individuals (hermaphrodites)

Transexuals Persons who were born one sex but live as members of the opposite sex and are often designated as male-to-female (MTF) or female-to-male (FTM)

Trend A long-term movement or change in frequency, usually upwards or downwards

Youth Risk Behavior Surveillance System (YRBSS) A national school-based data system that provides estimates of substance use and sexual behaviors that can increase HIV infection.

HIV/STD/Viral Hepatitis Hotline

1-800-533-4148

www.vdh.state.va.us/std



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